

Robustness of radiomics among photon-counting detector CT and dual-energy CT systems: a texture phantom study

ELECTRONIC SUPPLEMENTARY MATERIAL

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Supplementary Note 1 Details of the set-ups of texture phantom

We established a texture phantom consisting of twenty-eight different materials. There were five wood blocks and twenty-three bottles filled with different materials.

(1) Wood blocks

The wood block was cuboid with a size of 150 mm × 55 mm × 45 mm. We bought and asked the seller to cut the wood into the size of 150 mm × 55 mm × 45 mm. The types of wood were selected to present different textures. We ask the seller to recommend the types of woods with heterogenous densities and textures. He kindly recommended the following five types of wood: rose wood, chicken wing wood, beechwood, zebra wood, and basswood.

(2) Bottles filled with different materials

We recycled the bottles of juice bought in the convenience store. Our colleagues drank the juice, and cleaned the bottles using fresh water. The bottles were then naturally dried for this study. They were also asked to provide various materials with heterogenous densities and textures.

The materials that they brought from their home or we bought from the supermarket or online includes following: mesoporous sponge, iodize free salt, granulated sugar, flour, iodized salt, coarse-pore sponge, nutritive soil for succulent plants, sand, microporous sponge, coix seed, buckwheat, sago, cat litter, oat, sawdust, soybean, red bean, mung bean, rice, quinoa, millet, and chia seed. We additionally included a bottle filled with air.

The cuboid part of the bottle was with a size of 130 mm × 55 mm × 45 mm. The cuboid part bottle was filled with materials as tightly as possible, and tissue was put into the cylindrical part of the bottle if needed to avoid unexpected movement. These materials were selected to give us varying texture. The materials were positioned to avoid beam-hardening artifacts and were kept unchanged throughout all the scans in the study.



Supplementary Note 2 Radiomics feature extraction method

(1) yaml document for radiomics feature extraction

We did not perform any post-processing steps (such as resampling, normalization, combat, etc.) before the feature extraction.

```
featureClass:
  firstorder: null
  glcm: null
  glcm: null
  glrlm: null
  glszm: null
  ngtdm: null
imageType:
  Original: {}
setting:
  additionalInfo: false
  binCount: 16
  force2D: true
  geometryTolerance: 1e-6
  label: 1
  resegmentMode: sigma
```

(2) Name of calculated features

The details of calculation of each feature are available via the website of PyRadiomics (<https://pyradiomics.readthedocs.io/en/latest/>).

No	Feature family	Name of features
1	firstorder	10Percentile
2	firstorder	90Percentile
3	firstorder	Energy
4	firstorder	Entropy
5	firstorder	InterquartileRange
6	firstorder	Kurtosis
7	firstorder	Maximum
8	firstorder	MeanAbsoluteDeviation
9	firstorder	Mean
10	firstorder	Median
11	firstorder	Minimum
12	firstorder	Range
13	firstorder	RobustMeanAbsoluteDeviation
14	firstorder	RootMeanSquared
15	firstorder	Skewness
16	firstorder	TotalEnergy
17	firstorder	Uniformity
18	firstorder	Variance
19	glcm	Autocorrelation

20	glcm	ClusterProminence
21	glcm	ClusterShade
22	glcm	ClusterTendency
23	glcm	Contrast
24	glcm	Correlation
25	glcm	DifferenceAverage
26	glcm	DifferenceEntropy
27	glcm	DifferenceVariance
28	glcm	Id
29	glcm	Idm
30	glcm	Idmn
31	glcm	Idn
32	glcm	Imc1
33	glcm	Imc2
34	glcm	InverseVariance
35	glcm	JointAverage
36	glcm	JointEnergy
37	glcm	JointEntropy
38	glcm	MCC
39	glcm	MaximumProbability
40	glcm	SumAverage
41	glcm	SumEntropy
42	glcm	SumSquares
43	gldm	DependenceEntropy
44	gldm	DependenceNonUniformity
45	gldm	DependenceNonUniformityNormalized
46	gldm	DependenceVariance
47	gldm	GrayLevelNonUniformity
48	gldm	GrayLevelVariance
49	gldm	HighGrayLevelEmphasis
50	gldm	LargeDependenceEmphasis
51	gldm	LargeDependenceHighGrayLevelEmphasis
52	gldm	LargeDependenceLowGrayLevelEmphasis
53	gldm	LowGrayLevelEmphasis
54	gldm	SmallDependenceEmphasis
55	gldm	SmallDependenceHighGrayLevelEmphasis
56	gldm	SmallDependenceLowGrayLevelEmphasis
57	glrlm	GrayLevelNonUniformity
58	glrlm	GrayLevelNonUniformityNormalized
59	glrlm	GrayLevelVariance
60	glrlm	HighGrayLevelRunEmphasis
61	glrlm	LongRunEmphasis
62	glrlm	LongRunHighGrayLevelEmphasis
63	glrlm	LongRunLowGrayLevelEmphasis

64	glrlm	LowGrayLevelRunEmphasis
65	glrlm	RunEntropy
66	glrlm	RunLengthNonUniformity
67	glrlm	RunLengthNonUniformityNormalized
68	glrlm	RunPercentage
69	glrlm	RunVariance
70	glrlm	ShortRunEmphasis
71	glrlm	ShortRunHighGrayLevelEmphasis
72	glrlm	ShortRunLowGrayLevelEmphasis
73	glszm	GrayLevelNonUniformity
74	glszm	GrayLevelNonUniformityNormalized
75	glszm	GrayLevelVariance
76	glszm	HighGrayLevelZoneEmphasis
77	glszm	LargeAreaEmphasis
78	glszm	LargeAreaHighGrayLevelEmphasis
79	glszm	LargeAreaLowGrayLevelEmphasis
80	glszm	LowGrayLevelZoneEmphasis
81	glszm	SizeZoneNonUniformity
82	glszm	SizeZoneNonUniformityNormalized
83	glszm	SmallAreaEmphasis
84	glszm	SmallAreaHighGrayLevelEmphasis
85	glszm	SmallAreaLowGrayLevelEmphasis
86	glszm	ZoneEntropy
87	glszm	ZonePercentage
88	glszm	ZoneVariance
89	ngtdm	Busyness
90	ngtdm	Coarseness
91	ngtdm	Complexity
92	ngtdm	Contrast
93	ngtdm	Strength

Supplementary Table 1 Repeatability of radiomics features

	B-A > 95%	B-A > 90%	B-A > 85%
5 mGy			
PCD-CT	68.8%	100.0%	100.0%
dsDECT	44.1%	100.0%	100.0%
rsDECT	12.9%	100.0%	100.0%
dlDECT	3.2%	82.8%	100.0%
ssDECT	39.8%	100.0%	100.0%
10 mGy			
PCD-CT	57.0%	100.0%	100.0%
dsDECT	43.0%	100.0%	100.0%
rsDECT	21.5%	100.0%	100.0%
dlDECT	7.5%	84.9%	100.0%
ssDECT	25.8%	100.0%	100.0%
20 mGy			
PCD-CT	60.2%	100.0%	100.0%
dsDECT	34.4%	100.0%	100.0%
rsDECT	40.9%	100.0%	100.0%
dlDECT	9.7%	88.2%	100.0%
ssDECT	26.9%	100.0%	100.0%
Overall	33.0 ± 20.1%	97.1 ± 6.2%	100.0 ± 0.0%

Supplementary Table S2 Signal-to-noise ratio across the different datasets

ROI	5 mGy					10 mGy					20 mGy				
	PCD-CT	dsDECT	rsDECT	dlDECT	ssDECT	PCD-CT	dsDECT	rsDECT	dlDECT	ssDECT	PCD-CT	dsDECT	rsDECT	dlDECT	ssDECT
1	0.0024	0.0031	0.0032	1.0402	0.0018	0.0024	0.0031	0.0031	1.0835	0.0018	0.0024	0.0030	0.0031	1.0923	0.0016
2	0.0017	0.0037	0.0045	0.9692	0.8539	0.0016	0.0035	0.0043	1.0184	1.1627	0.0016	0.0034	0.0043	1.0234	0.9341
3	0.0024	0.0057	0.0072	1.1227	0.0014	0.0024	0.0054	0.0071	1.1113	0.0014	0.0023	0.0052	0.0069	1.1706	0.0011
4	0.0075	0.0062	0.0178	0.9034	0.0017	0.0074	0.0061	0.0173	0.9300	0.0017	0.0074	0.0061	0.0172	0.9531	0.0013
5	1.0338	0.0137	0.0135	0.9588	0.0071	1.1576	0.0129	0.0134	0.9589	0.0070	1.2377	0.0124	0.0133	0.9824	0.0047
6	0.1406	0.0065	0.0156	1.2392	0.1294	0.1476	0.0064	0.0154	1.2857	0.1536	0.1503	0.0063	0.0154	1.3389	0.1044
7	0.0875	0.0120	0.0132	1.0764	0.0986	0.0847	0.0112	0.0126	1.1085	0.1045	0.0857	0.0107	0.0122	1.1241	0.0683
8	10.3329	0.0011	0.0014	0.0051	0.5634	9.7177	0.0011	0.0014	0.0047	0.5839	9.2621	0.0010	0.0014	0.0047	0.5037
9	0.0053	0.0024	0.0206	0.0036	8.6758	0.0053	0.0024	0.0199	0.0035	13.8023	0.0052	0.0024	0.0196	0.0033	17.4690
10	0.5056	0.0182	0.0371	4.1772	0.0040	0.5139	0.0173	0.0365	4.2183	0.0039	0.5148	0.0168	0.0361	5.3562	0.0029
11	0.0137	0.0279	0.0492	0.0052	0.0110	0.0135	0.0271	0.0481	0.0054	0.0113	0.0134	0.0264	0.0473	0.0049	0.0074
12	0.0320	0.0341	0.0014	0.0240	0.0299	0.0309	0.0329	0.0013	0.0222	0.0300	0.0304	0.0319	0.0013	0.0202	0.0190
13	0.1190	0.0218	0.0754	0.5769	0.0652	0.1192	0.0217	0.0751	0.6352	0.0648	0.1210	0.0212	0.0743	0.6542	0.0527
14	0.0074	0.0740	0.1323	0.4575	0.0057	0.0073	0.0717	0.1334	0.4626	0.0056	0.0073	0.0709	0.1330	0.4597	0.0041
15	0.0124	0.0008	0.0005	11.4819	0.0120	0.0123	0.0008	0.0005	19.1870	0.0160	0.0126	0.0008	0.0005	25.1650	0.0067
16	0.5239	0.0065	0.0065	0.0143	0.0095	0.5062	0.0065	0.0063	0.0126	0.0097	0.4783	0.0065	0.0062	0.0128	0.0069
17	0.2096	0.0026	0.0013	0.8733	0.4470	0.2065	0.0026	0.0013	0.9193	0.5152	0.2013	0.0026	0.0013	0.9100	0.5302
18	0.1055	0.0012	0.0137	0.0459	0.5418	0.1041	0.0012	0.0133	0.0366	0.6442	0.1020	0.0012	0.0124	0.0354	0.5241
19	0.2846	0.0124	0.0403	0.1218	0.2167	0.2907	0.0123	0.0386	0.0946	0.2254	0.2832	0.0121	0.0371	0.0953	0.1700
20	0.4237	0.0236	0.0032	0.0180	0.5769	0.4352	0.0234	0.0031	0.0176	0.6713	0.4406	0.0227	0.0030	0.0170	0.5511
21	0.0100	0.0009	0.0081	0.2068	0.5084	0.0079	0.0009	0.0079	0.2083	0.5647	0.0088	0.0009	0.0078	0.2038	0.5481
22	2.9861	0.0913	0.0866	0.0501	8.5477	3.2200	0.0894	0.0849	0.0426	14.5829	3.3636	0.0868	0.0823	0.0439	14.6275
23	5.4877	0.1278	0.1008	1.0494	1.4035	5.8023	0.1223	0.0993	1.2343	1.7539	5.7959	0.1227	0.0981	1.2494	1.4434
24	1.4569	0.0992	0.0006	0.0320	4.4041	1.7114	0.0970	0.0005	0.0393	4.6474	1.8746	0.0942	0.0005	0.0323	4.4584
25	0.1714	0.0003	0.0078	0.6156	5.5724	0.1920	0.0003	0.0078	0.6808	8.0242	0.2036	0.0003	0.0080	0.6173	8.3479
26	0.5670	0.0053	0.0122	0.3741	1.2132	0.7172	0.0053	0.0122	0.3216	1.3482	0.7924	0.0053	0.0124	0.3181	1.3871
27	1.4403	0.0072	0.0021	0.6947	0.1510	1.7518	0.0071	0.0021	0.6799	0.1640	1.7406	0.0070	0.0021	0.6497	0.1475
28	4.8743	0.0005	0.1622	0.4934	0.3660	7.8860	0.0005	0.1541	0.5261	0.4066	7.5586	0.0005	0.1436	0.5153	0.4153

Supplementary Table S3 Mean relative change of the radiomics features across the different datasets

ROI	5 mGy					10 mGy					20 mGy				
	PCD-CT	dsDECT	rsDECT	dIDECT	ssDECT	PCD-CT	dsDECT	rsDECT	dIDECT	ssDECT	PCD-CT	dsDECT	rsDECT	dIDECT	ssDECT
1	n. a.	-9.7%	-0.2%	-26.0%	-38.3%	n. a.	-4.7%	-0.2%	-26.5%	-37.8%	n. a.	-3.2%	-0.1%	-24.0%	-35.4%
2	n. a.	-14.4%	0.2%	-0.1%	0.0%	n. a.	-6.8%	0.1%	-0.1%	0.0%	n. a.	-4.3%	0.2%	-0.1%	0.0%
3	n. a.	-22.2%	-0.3%	-0.9%	-0.3%	n. a.	-7.7%	-0.3%	-0.9%	-0.3%	n. a.	-8.4%	-0.2%	-1.2%	-0.3%
4	n. a.	-43.4%	-0.5%	-4.4%	-46.5%	n. a.	-21.0%	-0.3%	-4.9%	-41.3%	n. a.	-10.7%	-0.3%	-5.5%	-51.0%
5	n. a.	-16.0%	-1.8%	-50.7%	-1.8%	n. a.	-8.3%	-1.2%	-53.0%	-1.6%	n. a.	-4.7%	-1.1%	-40.4%	-1.8%
6	n. a.	-38.3%	-0.1%	-6.9%	-9.3%	n. a.	-22.0%	-0.1%	-6.5%	-8.1%	n. a.	-17.5%	-0.1%	-7.0%	-7.7%
7	n. a.	-79.0%	-0.1%	-0.6%	-1.3%	n. a.	-33.9%	-0.1%	-0.6%	-1.2%	n. a.	-18.5%	-0.1%	-0.7%	-1.2%
8	n. a.	-3.6%	-0.2%	-24.2%	-26.0%	n. a.	-3.5%	-0.1%	-25.0%	-26.9%	n. a.	-3.9%	-0.1%	-24.6%	-27.7%
9	n. a.	-0.1%	-0.1%	-9.9%	-31.6%	n. a.	-0.1%	-0.2%	-11.2%	-31.8%	n. a.	-0.1%	-0.1%	-10.8%	-37.4%
10	n. a.	0.1%	-0.5%	-1.6%	-2.4%	n. a.	0.1%	-0.4%	-1.5%	-2.2%	n. a.	0.1%	-0.4%	-1.2%	-1.9%
11	n. a.	0.0%	-0.1%	-0.9%	-6.0%	n. a.	0.0%	-0.1%	-0.9%	-5.6%	n. a.	0.0%	0.0%	-1.2%	-5.6%
12	n. a.	1.4%	0.2%	-64.4%	-1.4%	n. a.	-6.2%	1.0%	-83.0%	2.2%	n. a.	0.3%	-0.1%	-71.4%	-1.0%
13	n. a.	0.1%	-0.1%	-4.3%	-2.8%	n. a.	0.1%	-0.1%	-4.6%	-2.5%	n. a.	0.1%	-0.1%	-3.8%	-2.7%
14	n. a.	0.1%	-0.2%	-16.1%	-6.7%	n. a.	0.1%	-0.1%	-15.3%	-6.7%	n. a.	0.2%	-0.1%	-12.7%	-5.7%
15	n. a.	0.1%	-105.1%	-56.0%	-88.6%	n. a.	0.1%	-72.7%	-50.0%	-83.9%	n. a.	0.1%	-61.7%	-51.9%	-89.0%
16	n. a.	-0.3%	-1.1%	-218.2%	-216.4%	n. a.	-0.3%	-0.8%	-171.6%	-178.7%	n. a.	-0.3%	-0.8%	-114.6%	-167.4%
17	n. a.	-0.2%	0.1%	-39.2%	-63.9%	n. a.	-0.2%	0.1%	-30.0%	-58.2%	n. a.	-0.2%	0.1%	-35.8%	-64.6%
18	n. a.	0.2%	-0.2%	-49.1%	-161.8%	n. a.	0.2%	-0.3%	-55.3%	-140.7%	n. a.	0.2%	-0.2%	-39.4%	-140.9%
19	n. a.	0.1%	0.0%	-25.9%	-7.2%	n. a.	0.1%	0.0%	-34.4%	-7.2%	n. a.	0.1%	0.0%	-19.6%	-5.3%
20	n. a.	0.0%	0.1%	-35.3%	-6.2%	n. a.	0.0%	0.1%	-39.0%	-5.9%	n. a.	0.0%	0.1%	-44.4%	-5.9%
21	n. a.	-6.5%	-5.7%	-30.1%	-29.9%	n. a.	-6.4%	-5.6%	-30.8%	-31.0%	n. a.	-6.4%	-5.4%	-28.6%	-27.6%
22	n. a.	-1.5%	-1.0%	-1.3%	-1.5%	n. a.	-1.0%	-0.6%	-1.7%	-1.9%	n. a.	-0.9%	-0.6%	-1.4%	-1.7%
23	n. a.	0.1%	0.1%	-35.1%	-21.4%	n. a.	0.1%	0.1%	-46.8%	-29.2%	n. a.	0.1%	0.1%	-36.3%	-25.2%
24	n. a.	-2.9%	0.2%	-217.1%	-56.4%	n. a.	-3.3%	0.1%	-266.7%	-58.5%	n. a.	-3.0%	0.2%	-372.9%	-74.4%
25	n. a.	-1.5%	-5.2%	-73.7%	-72.0%	n. a.	-0.5%	-4.7%	-129.6%	-117.6%	n. a.	-0.6%	-3.9%	-100.6%	-102.6%
26	n. a.	-0.4%	-3.3%	-281.3%	-131.1%	n. a.	-0.2%	-1.3%	-395.0%	-189.4%	n. a.	-0.2%	-0.9%	-469.7%	-262.9%
27	n. a.	0.0%	-0.2%	-754.9%	-307.7%	n. a.	0.0%	-0.4%	-964.2%	-386.6%	n. a.	-0.1%	-0.5%	-1151.4%	-482.3%
28	n. a.	-0.2%	-0.2%	-81.5%	-444.0%	n. a.	-0.2%	-0.4%	-75.4%	-474.8%	n. a.	-0.2%	-0.3%	-93.0%	-570.3%

Supplementary Table S4 The repeatability of radiomics features

Feature type	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3	E1	E2	E3
ICC															
First order	0.990	0.996	0.998	0.998	0.999	0.999	0.998	0.998	0.998	0.715	0.724	0.733	0.852	0.862	0.857
GLCM	0.939	0.969	0.985	0.994	0.994	0.995	0.993	0.993	0.992	0.652	0.679	0.712	0.769	0.801	0.807
GLDM	0.889	0.932	0.966	0.987	0.989	0.990	0.988	0.987	0.986	0.639	0.670	0.705	0.603	0.655	0.648
GLRLM	0.781	0.872	0.975	0.984	0.984	0.985	0.985	0.979	0.980	0.616	0.657	0.701	0.531	0.595	0.572
GLSZM	0.855	0.911	0.941	0.931	0.937	0.934	0.920	0.918	0.934	0.556	0.576	0.643	0.504	0.564	0.546
NDTDM	0.903	0.955	0.974	0.982	0.987	0.985	0.987	0.981	0.979	0.573	0.563	0.601	0.726	0.787	0.766
CCC															
First order	0.990	0.996	0.998	0.998	0.999	0.999	0.998	0.998	0.998	0.714	0.723	0.732	0.851	0.862	0.857
GLCM	0.938	0.968	0.985	0.994	0.994	0.995	0.993	0.993	0.992	0.651	0.678	0.711	0.768	0.800	0.806
GLDM	0.888	0.931	0.966	0.987	0.989	0.989	0.988	0.987	0.986	0.637	0.669	0.704	0.602	0.654	0.647
GLRLM	0.780	0.871	0.975	0.984	0.984	0.985	0.985	0.979	0.980	0.614	0.656	0.700	0.529	0.594	0.571
GLSZM	0.854	0.910	0.941	0.931	0.936	0.934	0.919	0.918	0.933	0.555	0.575	0.642	0.503	0.564	0.545
NDTDM	0.902	0.955	0.974	0.982	0.987	0.985	0.987	0.981	0.979	0.571	0.561	0.599	0.725	0.786	0.765

Supplementary Table S5 The intra-system reproducibility among three dose levels

Feature type	A1/A2	A1/A3	A2/A3	B1/B2	B1/B3	B2/B3	C1/C2	C1/C3	C2/C3	D1/D2	D1/D3	D2/D3	E1/E2	E1/E3	E2/E3
ICC															
First order	0.996	0.993	0.996	0.998	0.995	0.999	0.998	0.996	0.998	0.992	0.989	0.995	0.992	0.983	0.986
GLCM	0.950	0.934	0.970	0.993	0.987	0.995	0.992	0.987	0.994	0.959	0.931	0.962	0.930	0.931	0.936
GLDM	0.912	0.892	0.935	0.986	0.974	0.990	0.983	0.970	0.989	0.932	0.887	0.933	0.893	0.898	0.924
GLRLM	0.876	0.764	0.846	0.983	0.965	0.983	0.974	0.959	0.984	0.934	0.859	0.921	0.908	0.911	0.931
GLSZM	0.895	0.839	0.889	0.932	0.918	0.941	0.911	0.891	0.931	0.883	0.829	0.906	0.876	0.870	0.901
NDTDM	0.925	0.838	0.920	0.984	0.974	0.986	0.979	0.966	0.983	0.935	0.912	0.945	0.908	0.905	0.901
CCC															
First order	0.996	0.993	0.996	0.998	0.995	0.999	0.998	0.996	0.998	0.992	0.989	0.995	0.992	0.983	0.986
GLCM	0.950	0.934	0.970	0.993	0.986	0.995	0.992	0.987	0.994	0.959	0.931	0.962	0.930	0.931	0.936
GLDM	0.912	0.891	0.935	0.986	0.974	0.990	0.983	0.970	0.989	0.932	0.886	0.933	0.893	0.898	0.924
GLRLM	0.876	0.763	0.846	0.983	0.965	0.983	0.974	0.959	0.983	0.934	0.858	0.921	0.908	0.911	0.931
GLSZM	0.895	0.839	0.889	0.932	0.918	0.940	0.911	0.891	0.931	0.882	0.829	0.906	0.876	0.870	0.901
NDTDM	0.925	0.838	0.920	0.984	0.974	0.986	0.979	0.966	0.983	0.934	0.912	0.945	0.908	0.905	0.901

Supplementary Table S6 The inter-system reproducibility within the same dose level

Feature type	ICC						CCC					
	First order	GLCM	GLDM	GLRLM	GLSZM	NDTDM	First order	GLCM	GLDM	GLRLM	GLSZM	NDTDM
A1/B1	0.126	0.086	0.092	0.058	0.065	0.025	0.126	0.086	0.092	0.058	0.065	0.025
A2/B2	0.125	0.099	0.117	0.067	0.082	0.052	0.124	0.099	0.117	0.067	0.082	0.051
A3/B3	0.126	0.109	0.127	0.072	0.091	0.054	0.126	0.108	0.126	0.072	0.091	0.054
A1/C1	0.169	0.098	0.117	0.066	0.104	0.053	0.169	0.098	0.116	0.066	0.103	0.053
A2/C2	0.168	0.103	0.14	0.064	0.111	0.071	0.167	0.103	0.14	0.063	0.111	0.071
A3/C3	0.167	0.112	0.152	0.072	0.126	0.075	0.167	0.112	0.151	0.071	0.125	0.075
A1/D1	0.194	0.136	0.133	0.134	0.091	0.118	0.193	0.135	0.132	0.134	0.091	0.118
A2/D2	0.195	0.148	0.143	0.146	0.093	0.123	0.194	0.147	0.143	0.145	0.093	0.123
A3/D3	0.196	0.165	0.137	0.139	0.1	0.109	0.195	0.164	0.136	0.139	0.1	0.108
A1/E1	0.224	0.28	0.158	0.102	0.154	0.172	0.224	0.279	0.157	0.102	0.154	0.172
A2/E2	0.231	0.305	0.161	0.11	0.185	0.211	0.23	0.304	0.161	0.11	0.185	0.211
A3/E3	0.211	0.355	0.215	0.128	0.216	0.265	0.211	0.355	0.215	0.128	0.216	0.264
B1/C1	0.369	0.619	0.612	0.495	0.413	0.479	0.368	0.618	0.611	0.495	0.412	0.478
B2/C2	0.37	0.63	0.627	0.507	0.432	0.479	0.37	0.629	0.626	0.506	0.431	0.478
B3/C3	0.371	0.638	0.638	0.522	0.432	0.487	0.371	0.637	0.637	0.521	0.432	0.486
B1/D1	0.121	0.076	0.063	0.066	0.077	0.059	0.12	0.075	0.063	0.065	0.077	0.059
B2/D2	0.12	0.087	0.075	0.074	0.074	0.059	0.119	0.086	0.075	0.074	0.074	0.059
B3/D3	0.121	0.101	0.09	0.09	0.075	0.063	0.12	0.1	0.09	0.09	0.075	0.063
B1/E1	0.164	0.089	0.072	0.056	0.089	0.069	0.163	0.088	0.072	0.055	0.089	0.069
B2/E2	0.164	0.112	0.093	0.067	0.09	0.103	0.163	0.112	0.092	0.067	0.089	0.102
B3/E3	0.17	0.103	0.097	0.061	0.078	0.076	0.17	0.102	0.096	0.061	0.078	0.076
C1/D1	0.117	0.08	0.066	0.068	0.076	0.042	0.116	0.079	0.066	0.068	0.076	0.041
C2/D2	0.114	0.091	0.08	0.075	0.083	0.042	0.113	0.091	0.08	0.074	0.082	0.042
C3/D3	0.116	0.104	0.095	0.091	0.092	0.044	0.115	0.103	0.095	0.09	0.091	0.044
C1/E1	0.144	0.077	0.089	0.053	0.081	0.077	0.144	0.077	0.089	0.053	0.08	0.077
C2/E2	0.145	0.091	0.105	0.062	0.08	0.107	0.144	0.09	0.104	0.061	0.08	0.107

C3/E3	0.148	0.088	0.106	0.059	0.087	0.091	0.148	0.087	0.106	0.059	0.087	0.091
D1/E1	0.151	0.124	0.102	0.122	0.087	0.147	0.15	0.123	0.101	0.121	0.086	0.147
D2/E2	0.158	0.115	0.104	0.119	0.077	0.127	0.157	0.115	0.103	0.118	0.076	0.126
D3/E3	0.156	0.139	0.098	0.12	0.088	0.131	0.156	0.139	0.097	0.119	0.088	0.131

Supplementary Table S7 The inter-system variability among five scanners according to materials

ROI	CV						QCD					
	First order	GLCM	GLDM	GLRLM	GLSZM	NDTDM	First order	GLCM	GLDM	GLRLM	GLSZM	NDTDM
5 mGy												
1	269%	42%	44%	38%	42%	27%	42%	56%	36%	27%	28%	21%
2	154%	41%	41%	38%	63%	25%	77%	15%	19%	14%	22%	15%
3	136%	46%	49%	42%	65%	30%	31%	20%	26%	19%	36%	22%
4	198%	63%	65%	72%	74%	53%	66%	41%	47%	41%	53%	31%
5	112%	48%	58%	62%	74%	39%	81%	35%	43%	38%	50%	23%
6	98%	37%	60%	54%	65%	44%	84%	33%	42%	33%	47%	34%
7	503%	52%	58%	52%	73%	39%	89%	22%	30%	24%	37%	28%
8	255%	47%	54%	53%	70%	55%	290%	39%	45%	42%	42%	42%
9	123%	54%	63%	61%	65%	52%	236%	37%	41%	37%	41%	35%
10	152%	65%	44%	38%	48%	29%	806%	44%	38%	29%	37%	23%
11	49%	38%	44%	37%	58%	33%	31%	31%	33%	22%	38%	30%
12	67%	60%	69%	76%	84%	56%	34%	31%	28%	21%	37%	29%
13	64%	37%	42%	36%	52%	27%	39%	28%	37%	30%	40%	21%
14	83%	33%	48%	44%	60%	38%	77%	27%	42%	36%	47%	35%
15	160%	52%	54%	53%	80%	54%	86%	60%	44%	38%	44%	47%
16	177%	49%	61%	63%	61%	49%	83%	42%	52%	51%	53%	42%
17	463%	63%	72%	67%	65%	57%	385%	39%	44%	47%	47%	48%
18	261%	59%	65%	69%	68%	76%	49%	42%	49%	42%	49%	54%
19	57%	43%	55%	55%	64%	50%	34%	33%	43%	37%	44%	40%
20	25%	52%	61%	70%	68%	65%	55%	34%	43%	43%	46%	43%
21	223%	78%	80%	81%	77%	66%	117%	46%	46%	47%	51%	40%
22	78%	52%	68%	70%	76%	51%	35%	46%	60%	53%	50%	39%
23	114%	41%	57%	56%	60%	43%	68%	33%	50%	48%	46%	30%
24	221%	58%	73%	82%	74%	75%	116%	36%	49%	50%	48%	33%
25	413%	52%	67%	69%	64%	56%	66%	45%	57%	57%	51%	45%

26	227%	53%	64%	66%	65%	52%	68%	42%	52%	53%	50%	42%
27	151%	55%	67%	67%	65%	67%	82%	45%	55%	57%	53%	54%
28	134%	56%	69%	84%	79%	71%	118%	35%	50%	52%	48%	39%
10 mGy												
1	289%	46%	44%	38%	45%	26%	43%	69%	36%	27%	28%	21%
2	156%	51%	45%	42%	66%	26%	80%	15%	17%	13%	20%	14%
3	138%	47%	51%	45%	65%	31%	30%	20%	25%	19%	35%	21%
4	241%	60%	65%	69%	69%	52%	64%	41%	48%	42%	54%	32%
5	111%	47%	58%	63%	73%	39%	86%	35%	44%	40%	50%	23%
6	100%	37%	62%	54%	67%	44%	77%	33%	41%	34%	48%	33%
7	497%	52%	61%	56%	77%	41%	142%	21%	29%	22%	36%	27%
8	358%	47%	54%	53%	71%	52%	2373%	38%	45%	40%	39%	39%
9	124%	52%	62%	59%	65%	49%	163%	35%	40%	36%	41%	33%
10	145%	64%	44%	37%	48%	30%	237%	55%	37%	28%	37%	23%
11	49%	38%	45%	38%	60%	32%	30%	31%	32%	22%	36%	30%
12	66%	59%	68%	78%	82%	56%	35%	32%	29%	23%	37%	30%
13	64%	37%	42%	36%	54%	27%	40%	30%	37%	30%	39%	23%
14	84%	34%	49%	47%	61%	39%	77%	27%	42%	38%	48%	36%
15	158%	52%	54%	54%	78%	55%	81%	436%	43%	38%	43%	47%
16	183%	50%	61%	63%	60%	48%	79%	44%	52%	53%	53%	43%
17	575%	62%	73%	68%	66%	59%	309%	39%	43%	47%	48%	47%
18	264%	59%	65%	69%	69%	78%	50%	42%	49%	40%	49%	54%
19	57%	44%	57%	58%	66%	51%	35%	33%	41%	37%	43%	42%
20	546%	52%	61%	69%	68%	67%	57%	35%	44%	45%	47%	45%
21	221%	78%	81%	79%	77%	68%	113%	46%	45%	46%	50%	40%
22	80%	53%	72%	69%	71%	51%	36%	46%	59%	53%	50%	39%
23	115%	42%	58%	58%	59%	43%	69%	36%	51%	50%	46%	31%
24	220%	57%	72%	80%	73%	74%	115%	35%	48%	49%	47%	31%
25	342%	51%	68%	68%	63%	55%	65%	44%	56%	57%	51%	43%

26	237%	54%	67%	64%	66%	54%	70%	40%	52%	52%	49%	37%
27	153%	55%	67%	66%	67%	68%	83%	44%	55%	56%	52%	52%
28	146%	55%	69%	84%	78%	71%	820%	35%	52%	52%	49%	38%
20 mGy												
1	318%	46%	44%	37%	47%	27%	43%	10142%	35%	26%	29%	21%
2	167%	63%	49%	47%	70%	27%	78%	14%	18%	14%	21%	14%
3	140%	56%	54%	51%	68%	35%	31%	20%	25%	20%	35%	20%
4	310%	61%	67%	69%	70%	54%	64%	43%	50%	44%	55%	34%
5	107%	47%	58%	61%	69%	41%	94%	37%	48%	44%	52%	27%
6	101%	38%	66%	58%	71%	46%	99%	34%	44%	35%	49%	35%
7	289%	53%	65%	63%	80%	45%	55%	22%	29%	22%	36%	29%
8	97%	47%	55%	52%	69%	55%	816%	38%	45%	40%	40%	40%
9	123%	52%	62%	60%	65%	49%	220%	34%	40%	36%	41%	33%
10	162%	60%	46%	39%	49%	32%	194%	46%	38%	30%	38%	24%
11	52%	38%	45%	38%	59%	32%	35%	30%	30%	20%	34%	30%
12	63%	59%	68%	73%	80%	55%	33%	32%	30%	21%	35%	31%
13	65%	37%	44%	37%	51%	26%	40%	29%	38%	31%	40%	22%
14	95%	35%	50%	48%	62%	42%	89%	29%	43%	39%	48%	39%
15	157%	52%	55%	55%	83%	56%	90%	85%	44%	39%	43%	46%
16	165%	51%	61%	63%	61%	48%	79%	45%	53%	53%	52%	44%
17	961%	62%	74%	68%	66%	61%	166%	38%	43%	48%	47%	46%
18	257%	58%	65%	68%	69%	76%	51%	41%	49%	42%	48%	52%
19	58%	46%	61%	74%	71%	58%	35%	35%	45%	39%	44%	48%
20	384%	53%	62%	69%	67%	71%	58%	36%	45%	46%	47%	50%
21	217%	78%	81%	80%	76%	67%	107%	46%	46%	47%	50%	40%
22	81%	54%	72%	71%	75%	57%	37%	48%	60%	53%	50%	41%
23	115%	42%	58%	58%	61%	43%	70%	37%	52%	50%	47%	33%
24	219%	58%	71%	77%	73%	73%	113%	38%	49%	50%	48%	36%
25	376%	52%	67%	68%	62%	56%	66%	44%	56%	57%	51%	44%

26	236%	53%	66%	63%	66%	54%	71%	40%	51%	52%	48%	36%
27	152%	55%	67%	66%	65%	67%	82%	44%	55%	56%	53%	50%
28	147%	55%	68%	85%	75%	71%	142%	36%	52%	51%	49%	39%

Supplementary Figure 1 Heatmap of repeatability of radiomics features

The heatmap of radiomics features in terms of test-retest repeatability at dose levels of 5 mGy, 10 mGy, and 20 mGy, according to Bland-Altman analysis. PCD-CT = photon counting detector CT, dsDECT = dual-source dual-energy CT, rsDECT = rapid kV-switching dual-energy CT, dlDECT = dual-layer dual-energy CT, ssDECT = sequential scanning DECT.

		PCD-CT			dsDECT			rsDECT			dlDECT			ssDECT		
		5 mGy	10 mGy	20 mGy	5 mGy	10 mGy	20 mGy	5 mGy	10 mGy	20 mGy	5 mGy	10 mGy	20 mGy	5 mGy	10 mGy	20 mGy
firstorder	10Percentile	95.7%	96.4%	95.0%	94.3%	92.1%	92.9%	94.3%	93.6%	93.6%	87.1%	86.4%	87.1%	94.3%	94.3%	95.7%
firstorder	90Percentile	93.6%	95.0%	95.0%	93.6%	94.3%	94.3%	94.3%	96.4%	96.4%	92.9%	92.9%	92.9%	92.9%	94.3%	94.3%
firstorder	Energy	91.4%	92.9%	92.1%	94.3%	95.0%	94.3%	92.1%	92.1%	94.3%	92.9%	92.9%	92.9%	92.1%	93.6%	93.6%
firstorder	Entropy	96.4%	95.7%	95.7%	95.7%	91.4%	93.6%	93.6%	92.1%	95.0%	92.1%	92.9%	90.7%	95.7%	95.0%	96.4%
firstorder	InterquartileRange	95.0%	94.3%	95.0%	93.6%	93.6%	90.7%	96.4%	96.4%	95.7%	92.9%	92.9%	92.9%	95.7%	95.0%	95.0%
firstorder	Kurtosis	97.9%	97.1%	97.1%	96.4%	97.1%	96.4%	92.1%	94.3%	93.6%	93.6%	94.3%	95.0%	92.1%	90.0%	90.7%
firstorder	Maximum	97.1%	97.9%	96.4%	93.6%	94.3%	92.1%	93.6%	93.6%	94.3%	85.3%	90.0%	88.6%	97.1%	97.1%	97.1%
firstorder	MeanAbsoluteDeviation	95.0%	94.3%	95.7%	95.0%	95.7%	92.9%	93.6%	93.6%	92.1%	92.9%	92.9%	92.9%	92.9%	93.6%	93.6%
firstorder	Mean	95.7%	95.7%	93.6%	93.6%	94.3%	94.3%	93.6%	93.6%	91.4%	92.9%	92.9%	92.9%	93.6%	94.3%	94.3%
firstorder	Median	94.3%	93.6%	94.3%	92.1%	95.0%	93.6%	94.3%	95.7%	93.6%	92.9%	92.9%	92.9%	92.9%	92.1%	92.9%
firstorder	Minimum	91.4%	94.3%	91.4%	92.9%	94.3%	93.6%	90.7%	91.4%	94.3%	92.1%	92.9%	92.9%	92.1%	93.6%	94.3%
firstorder	Range	95.7%	96.4%	96.4%	94.3%	93.6%	92.9%	92.1%	95.0%	96.4%	92.9%	92.9%	92.9%	96.4%	97.1%	96.4%
firstorder	RobustMeanAbsoluteDeviation	95.0%	95.0%	95.7%	94.3%	95.7%	92.1%	93.6%	93.6%	92.9%	92.9%	92.9%	92.9%	92.1%	91.4%	95.0%
firstorder	RootMeanSquared	94.3%	94.3%	93.6%	94.3%	95.0%	95.7%	96.4%	92.1%	94.3%	92.9%	92.9%	92.9%	92.9%	91.4%	92.9%
firstorder	Skewness	97.1%	97.1%	97.1%	95.0%	95.7%	96.4%	93.6%	94.3%	92.9%	93.6%	93.6%	93.6%	92.1%	92.1%	92.1%
firstorder	TotalEnergy	91.4%	92.9%	92.1%	94.3%	95.0%	94.3%	92.1%	92.1%	94.3%	92.9%	92.9%	92.9%	92.1%	93.6%	93.6%
firstorder	Uniformity	96.4%	97.1%	96.4%	95.7%	97.1%	95.0%	93.6%	92.9%	95.7%	92.1%	91.4%	92.9%	94.3%	92.1%	93.6%
firstorder	Variance	94.3%	94.3%	95.0%	95.0%	94.3%	92.1%	92.9%	93.6%	92.9%	92.9%	92.9%	92.9%	91.4%	92.1%	91.4%
gldm	Autocorrelation	92.9%	93.6%	93.6%	94.3%	92.1%	94.3%	93.6%	92.1%	93.6%	87.9%	89.3%	89.3%	92.9%	94.3%	94.3%
gldm	ClusterProminence	95.0%	94.3%	93.6%	95.0%	93.6%	90.7%	95.0%	93.6%	91.4%	95.7%	93.6%	93.6%	97.1%	96.4%	96.4%
gldm	ClusterShade	97.9%	95.0%	95.7%	92.1%	95.0%	93.6%	96.4%	92.1%	92.1%	92.9%	91.4%	90.0%	90.0%	91.4%	92.9%
gldm	ClusterTendency	94.3%	93.6%	91.4%	92.9%	91.4%	92.9%	93.6%	90.7%	92.9%	92.9%	90.0%	90.7%	97.1%	97.1%	97.1%
gldm	Contrast	95.0%	92.1%	92.9%	92.1%	92.9%	93.6%	91.4%	93.6%	94.3%	90.7%	92.9%	95.0%	94.3%	93.6%	94.3%
gldm	Correlation	95.0%	92.9%	94.3%	90.0%	97.1%	93.6%	92.1%	92.9%	93.6%	92.9%	92.1%	92.9%	95.0%	93.6%	93.6%
gldm	DifferenceAverage	95.7%	95.0%	94.3%	93.6%	92.1%	95.0%	92.9%	93.6%	95.0%	89.3%	88.6%	90.7%	93.6%	93.6%	93.6%
gldm	DifferenceEntropy	96.4%	94.3%	95.7%	93.6%	93.6%	92.9%	90.7%	93.6%	95.0%	92.9%	92.9%	90.7%	94.3%	93.6%	94.3%
gldm	DifferenceVariance	93.6%	92.9%	95.0%	93.6%	94.3%	94.3%	93.6%	96.4%	94.3%	91.4%	92.9%	90.0%	93.6%	93.6%	93.6%
gldm	Id	96.4%	95.0%	95.7%	93.6%	92.1%	94.3%	93.6%	95.0%	93.6%	92.1%	91.4%	92.9%	94.3%	92.9%	92.9%
gldm	Idm	95.7%	95.0%	95.0%	94.3%	92.1%	92.1%	94.3%	93.6%	95.0%	93.6%	92.1%	91.4%	92.1%	93.6%	93.6%
gldm	Idmm	95.0%	92.1%	92.9%	93.6%	92.1%	93.6%	93.6%	93.6%	90.7%	92.9%	94.3%	95.7%	92.9%	93.6%	93.6%
gldm	Idn	95.0%	95.0%	94.3%	92.9%	92.9%	92.9%	93.6%	94.3%	95.0%	89.3%	88.6%	90.7%	93.6%	93.6%	93.6%
gldm	Incl	94.3%	94.3%	95.0%	95.0%	92.1%	92.1%	92.1%	95.0%	96.4%	94.3%	96.4%	94.3%	90.7%	90.7%	90.7%
gldm	Incl2	94.3%	92.9%	97.1%	92.1%	95.0%	92.1%	95.7%	92.9%	93.6%	92.9%	92.1%	92.1%	91.4%	92.1%	90.0%
gldm	InverseVariance	93.6%	92.9%	94.3%	95.7%	96.4%	92.9%	92.1%	94.3%	95.7%	90.7%	92.1%	92.1%	95.0%	94.3%	93.6%
gldm	JointAverage	95.0%	94.3%	94.3%	92.9%	93.6%	92.9%	92.9%	91.4%	92.9%	90.0%	91.4%	90.0%	92.9%	94.3%	94.3%
gldm	JointEntropy	97.9%	97.1%	97.1%	96.4%	97.1%	95.0%	93.6%	92.9%	95.7%	92.9%	94.3%	94.3%	95.0%	91.4%	92.9%
gldm	JointVariance	96.4%	95.7%	95.7%	95.7%	91.4%	92.9%	94.3%	92.9%	95.0%	92.1%	92.9%	92.1%	95.0%	94.3%	93.6%
gldm	MCC	96.4%	94.3%	93.6%	92.1%	94.3%	92.9%	93.6%	94.3%	90.7%	92.9%	89.3%	90.7%	93.6%	92.1%	93.6%
gldm	MaximumProbability	97.9%	97.1%	96.4%	95.7%	96.4%	96.4%	92.9%	95.0%	94.3%	92.9%	95.0%	94.3%	92.9%	95.0%	93.6%
gldm	SumAverage	95.0%	94.3%	94.3%	92.9%	93.6%	92.9%	92.9%	91.4%	92.9%	90.0%	91.4%	90.0%	92.9%	94.3%	94.3%
gldm	SumEntropy	96.4%	97.1%	96.4%	95.0%	92.9%	94.3%	93.6%	91.4%	94.3%	91.4%	92.9%	92.1%	95.0%	94.3%	94.3%
gldm	SumSquares	93.6%	93.6%	92.9%	90.0%	92.1%	91.4%	93.6%	92.9%	92.9%	92.1%	92.9%	91.4%	97.1%	97.1%	97.1%
gldm	DependenceEntropy	97.1%	97.9%	96.4%	97.9%	97.1%	92.9%	91.4%	94.3%	88.6%	88.6%	88.6%	88.6%	93.6%	95.0%	93.6%
gldm	DependenceNonUniformity	95.0%	94.3%	95.0%	94.3%	93.6%	95.0%	91.4%	92.9%	97.9%	88.6%	88.6%	88.6%	97.1%	93.6%	93.6%
gldm	DependenceNonUniformityNormalized	95.0%	94.3%	95.0%	94.3%	93.6%	95.0%	91.4%	92.9%	97.9%	88.6%	88.6%	88.6%	97.1%	93.6%	93.6%
gldm	DependenceVariance	95.7%	95.0%	95.7%	94.3%	97.1%	95.0%	95.7%	94.3%	95.0%	93.6%	90.7%	91.4%	92.1%	94.3%	93.6%
gldm	GrayLevelNonUniformity	96.4%	97.1%	96.4%	95.7%	97.1%	95.0%	93.6%	92.9%	95.7%	92.1%	93.6%	92.9%	94.3%	92.1%	92.1%
gldm	GrayLevelVariance	94.3%	93.6%	93.6%	90.0%	91.4%	91.4%	93.6%	92.1%	92.9%	92.1%	90.0%	90.7%	97.1%	97.1%	97.1%
gldm	HighGrayLevelEmphasis	92.9%	94.3%	93.6%	94.3%	92.1%	94.3%	93.6%	92.1%	94.3%	87.9%	89.3%	89.3%	92.9%	94.3%	94.3%
gldm	LargeDependenceEmphasis	95.7%	97.1%	96.4%	96.4%	97.1%	92.9%	92.9%	93.6%	95.7%	93.6%	93.6%	92.9%	92.9%	95.0%	92.9%
gldm	LargeDependenceHighGrayLevelEmphasis	96.4%	95.0%	95.0%	90.7%	95.0%	94.3%	95.7%	94.3%	95.0%	92.9%	90.7%	90.7%	95.0%	95.7%	92.9%
gldm	LargeDependenceLowGrayLevelEmphasis	97.9%	97.9%	96.4%	96.4%	96.4%	93.6%	92.1%	92.9%	92.9%	92.1%	93.6%	92.9%	94.3%	93.6%	95.0%
gldm	LowGrayLevelEmphasis	92.9%	97.9%	97.9%	92.1%	95.7%	95.0%	93.6%	94.3%	95.0%	90.7%	91.4%	91.4%	95.0%	93.6%	92.1%
gldm	SmallDependenceEmphasis	95.0%	95.0%	94.3%	94.3%	93.6%	94.3%	92.9%	92.1%	92.9%	89.3%	88.6%	89.3%	92.9%	91.4%	94.3%
gldm	SmallDependenceHighGrayLevelEmphasis	93.6%	95.7%	93.6%	94.3%	93.6%	92.9%	92.1%	92.1%	91.4%	91.4%	90.0%	91.4%	93.6%	91.4%	94.3%
gldm	SmallDependenceLowGrayLevelEmphasis	94.3%	96.4%	95.7%	92.9%	92.1%	92.9%	92.9%	95.7%	92.1%	93.6%	95.7%	92.1%	94.3%	93.6%	96.4%
gldm	GrayLevelNonUniformity	95.7%	94.3%	95.7%	96.4%	96.4%	96.4%	92.9%	94.3%	95.0%	90.7%	91.4%	91.4%	92.1%	91.4%	92.1%
gldm	GrayLevelNonUniformityNormalized	96.4%	97.1%	96.4%	96.4%	95.7%	93.6%	94.3%	95.0%	95.0%	92.1%	92.9%	92.1%	93.6%	92.9%	92.9%
gldm	GrayLevelVariance	92.9%	93.6%	93.6%	91.4%	92.1%	92.1%	94.3%	92.9%	95.0%	92.9%	90.7%	91.4%	95.7%	95.7%	96.4%
gldm	HighGrayLevelRunEmphasis	92.9%	94.3%	93.6%	94.3%	92.1%	93.6%	94.3%	95.0%	93.6%	89.3%	89.3%	89.3%	95.0%	95.0%	93.6%
gldm	LongRunEmphasis	97.9%	97.1%	97.1%	97.9%	97.1%	95.7%	92.9%	92.9%	97.1%	93.6%	93.6%	94.3%	97.1%	93.6%	94.3%
gldm	LongRunHighGrayLevelEmphasis	94.3%	95.7%	95.0%	99.3%	97.1%	95.7%	92.1%	96.4%	97.1%	90.7%	91.4%	91.4%	98.6%	97.1%	96.4%
gldm	LongRunLowGrayLevelEmphasis	97.9%	97.9%	97.9%	97.9%	97.9%	96.4%	92.9%	95.0%	91.4%	92.1%	92.9%	95.0%	91.4%	94.3%	94.3%
gldm	LowGrayLevelRunEmphasis	97.9%	97.9%	97.9%	95.0%	96.4%	92.9%	92.9%	94.3%	92.9%	91.4%	91.4%	94.3%	94.3%	95.7%	94.3%
gldm	RunEntropy	94.3%	93.6%	93.6%	97.1%	95.7%	92.1%	95.0%	95.7%	94.3%	92.9%	92.9%	93.6%	94.3%	92.1%	93.6%
gldm	RunLengthNonUniformity	95.0%	95.0%	95.0%	93.6%	93.6%	95.0%	92.1%	92.1%	95.0%	93.6%	92.1%	91.4%	92.9%	93.6%	95.7%
gldm	RunLengthNonUniformityNormalized	95.0%	95.7%	95.7%	95.0%	92.1%	92.9%	95.0%	94.3%	92.1%	92.9%	93.6%	92.9%	96.4%	95.0%	94.3%
gldm	RunPercentage	95.7%	97.1%	96.4%	95.0%	95.0%	92.9%	92.9%	93.6%	95.7%	93.6%	94.3%	94.3%	92.1%	95.0%	92.1%
gldm	RunVariance	97.9%	97.1%	97.9%	97.9%	97.1%	95.7%	90.0%	95.0%	98.6%	93.6%	94.3%	94.3%	96.4%		

Supplementary Figure 2 Heatmap of intra-system reproducibility among three dose levels

The heatmap of radiomics features in terms of intra-system reproducibility among three dose levels of 5 versus 10 mGy, 5 versus 20 mGy, and 10 versus 20 mGy, according to ICC and CCC values. PCD-CT = photon counting detector CT, dsDECT = dual-source dual-energy CT, rsDECT = rapid kV-switching dual-energy CT, dlDECT = dual-layer dual-energy CT, ssDECT = sequential scanning DECT, ICC = intraclass correlation coefficient, CCC = concordance correlation coefficient.

(A) Heatmap of intra-system reproducibility by ICC

		CD-CT			dsDECT			rsDECT			dtDECT			ssDECT		
		5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy
firstorder	10Percentile	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
firstorder	90Percentile	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
firstorder	Energy	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Entropy	0.977	0.973	0.984	0.988	0.976	0.994	0.989	0.981	0.993	0.963	0.946	0.971	0.935	0.931	0.946
firstorder	InterquartileRange	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.997	0.997	0.998	1.000	0.980	0.980
firstorder	Kurtosis	0.994	0.982	0.992	0.998	0.996	0.999	0.997	0.996	0.999	0.963	0.961	0.981	0.990	0.964	0.982
firstorder	Maximum	1.000	1.000	1.000	0.999	0.999	1.000	0.999	0.999	1.000	1.000	1.000	1.000	1.000	0.998	0.998
firstorder	MeanAbsoluteDeviation	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.998	0.998	0.999	1.000	0.983	0.983
firstorder	Mean	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Median	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Minimum	1.000	1.000	1.000	0.988	0.977	0.993	0.991	0.989	0.995	0.999	0.999	0.999	1.000	0.996	0.996
firstorder	Range	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.997	0.998	0.997	0.998	0.999	0.999	0.986	0.985
firstorder	RobustMeanAbsoluteDeviation	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.997	0.998	0.999	1.000	0.982	0.982
firstorder	RootMeanSquared	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	0.999	0.999
firstorder	Skewness	0.988	0.981	0.993	0.999	0.998	0.998	1.000	0.999	1.000	0.991	0.988	0.995	0.972	0.968	0.976
firstorder	TotalEnergy	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Uniformity	0.966	0.965	0.985	0.986	0.992	0.997	0.993	0.978	0.986	0.966	0.969	0.978	0.954	0.945	0.960
firstorder	Variance	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.995	0.997	0.997	1.000	0.968	0.968
glcm	Autocorrelation	0.908	0.929	0.945	0.998	0.997	0.999	0.998	0.998	0.999	0.965	0.970	0.983	0.911	0.906	0.921
glcm	ClusterProminence	0.903	0.904	0.939	0.997	0.996	0.998	0.998	0.997	0.997	0.956	0.910	0.952	0.916	0.907	0.916
glcm	ClusterShade	0.927	0.919	0.961	0.999	0.999	0.999	0.999	0.999	0.999	0.986	0.970	0.986	0.942	0.943	0.927
glcm	ClusterTendency	0.942	0.945	0.966	0.999	0.998	0.999	0.999	0.998	0.999	0.948	0.923	0.946	0.929	0.925	0.938
glcm	Contrast	0.969	0.966	0.986	0.991	0.982	0.993	0.994	0.991	0.996	0.935	0.939	0.962	0.943	0.909	0.920
glcm	Correlation	0.972	0.955	0.994	0.998	0.994	0.999	0.999	0.997	0.999	0.989	0.985	0.995	0.925	0.964	0.945
glcm	DifferenceAverage	0.970	0.961	0.986	0.995	0.989	0.997	0.993	0.988	0.995	0.964	0.960	0.978	0.944	0.934	0.939
glcm	DifferenceEntropy	0.969	0.953	0.983	0.992	0.984	0.995	0.989	0.981	0.994	0.970	0.956	0.979	0.938	0.942	0.947
glcm	DifferenceVariance	0.965	0.963	0.982	0.992	0.985	0.994	0.995	0.992	0.997	0.901	0.884	0.935	0.938	0.901	0.915
glcm	Id	0.969	0.947	0.983	0.993	0.988	0.996	0.990	0.983	0.993	0.972	0.943	0.975	0.933	0.949	0.949
glcm	Idm	0.968	0.948	0.983	0.994	0.989	0.997	0.992	0.986	0.994	0.975	0.949	0.978	0.933	0.950	0.949
glcm	Idmn	0.970	0.965	0.986	0.992	0.983	0.994	0.993	0.990	0.996	0.943	0.946	0.967	0.944	0.915	0.925
glcm	Idn1	0.970	0.959	0.986	0.995	0.990	0.997	0.993	0.987	0.995	0.969	0.961	0.980	0.944	0.939	0.943
glcm	Imc1	0.919	0.811	0.939	0.999	0.997	0.999	0.997	0.993	0.997	0.976	0.974	0.970	0.942	0.946	0.949
glcm	Imc2	0.970	0.947	0.991	0.996	0.989	0.996	0.993	0.989	0.996	0.987	0.979	0.993	0.918	0.964	0.941
glcm	InverseVariance	0.908	0.857	0.945	0.975	0.959	0.986	0.975	0.958	0.983	0.914	0.746	0.832	0.937	0.922	0.929
glcm	JointAverage	0.928	0.945	0.958	0.999	0.998	0.999	0.999	0.999	0.999	0.974	0.976	0.987	0.921	0.916	0.928
glcm	JointEntropy	0.919	0.823	0.912	0.983	0.963	0.986	0.977	0.960	0.981	0.947	0.844	0.932	0.952	0.940	0.954
glcm	JointEntropy	0.926	0.893	0.964	0.999	0.997	0.999	0.999	0.998	0.999	0.985	0.941	0.972	0.935	0.936	0.949
glcm	MCC	0.974	0.957	0.993	0.996	0.991	0.997	0.997	0.995	0.998	0.986	0.982	0.991	0.930	0.956	0.952
glcm	MaximumProbability	0.937	0.884	0.940	0.980	0.966	0.985	0.973	0.962	0.978	0.926	0.839	0.922	0.912	0.905	0.939
glcm	SumAverage	0.928	0.945	0.958	0.999	0.998	0.999	0.999	0.999	0.999	0.974	0.976	0.987	0.921	0.916	0.928
glcm	SumEntropy	0.927	0.969	0.983	0.985	0.971	0.992	0.986	0.973	0.991	0.963	0.940	0.969	0.934	0.937	0.944
glcm	SumSquares	0.944	0.933	0.964	0.999	0.997	0.999	0.999	0.998	0.999	0.921	0.900	0.927	0.932	0.915	0.910
glcm	DependenceEntropy	0.950	0.903	0.952	0.977	0.956	0.985	0.970	0.945	0.980	0.948	0.929	0.956	0.904	0.913	0.924
glcm	DependenceNonUniformity	0.949	0.877	0.930	0.962	0.927	0.971	0.950	0.908	0.972	0.955	0.944	0.970	0.916	0.917	0.922
glcm	DependenceNonUniformityNormalized	0.949	0.877	0.930	0.962	0.927	0.971	0.950	0.908	0.972	0.955	0.944	0.970	0.916	0.917	0.922
glcm	DependenceVariance	0.940	0.890	0.948	0.980	0.973	0.987	0.974	0.959	0.982	0.904	0.807	0.906	0.873	0.885	0.898
glcm	GrayLevelNonUniformity	0.966	0.935	0.967	0.985	0.968	0.990	0.987	0.970	0.986	0.968	0.928	0.969	0.954	0.958	0.960
glcm	GrayLevelVariance	0.942	0.952	0.962	0.999	0.998	0.999	0.999	0.998	0.998	0.921	0.898	0.925	0.928	0.911	0.927
glcm	HighGrayLevelEmphasis	0.914	0.934	0.948	0.998	0.997	0.999	0.998	0.998	0.999	0.966	0.971	0.984	0.912	0.906	0.921
glcm	LargeDependenceEmphasis	0.952	0.903	0.965	0.986	0.977	0.992	0.984	0.972	0.989	0.944	0.843	0.931	0.906	0.943	0.946
glcm	LargeDependenceHighGrayLevelEmphasis	0.770	0.769	0.948	0.985	0.981	0.992	0.991	0.989	0.991	0.930	0.935	0.957	0.845	0.898	0.934
glcm	LargeDependenceLowGrayLevelEmphasis	0.987	0.899	0.919	0.998	0.994	0.997	0.995	0.991	0.998	0.972	0.919	0.903	0.909	0.907	0.906
glcm	LowGrayLevelEmphasis	0.888	0.892	0.887	0.999	0.997	0.998	0.998	0.997	0.999	0.922	0.822	0.884	0.900	0.892	0.971
glcm	SmallDependenceEmphasis	0.962	0.947	0.981	0.995	0.990	0.996	0.991	0.985	0.994	0.972	0.965	0.981	0.932	0.940	0.937
glcm	SmallDependenceHighGrayLevelEmphasis	0.955	0.955	0.974	0.995	0.991	0.995	0.992	0.989	0.994	0.964	0.966	0.979	0.925	0.908	0.927
glcm	SmallDependenceLowGrayLevelEmphasis	0.671	0.757	0.783	0.977	0.967	0.982	0.982	0.974	0.990	0.834	0.843	0.848	0.683	0.692	0.766
glrm	GrayLevelNonUniformity	0.894	0.835	0.909	0.979	0.956	0.978	0.967	0.946	0.969	0.935	0.871	0.915	0.915	0.919	0.916
glrm	GrayLevelNonUniformityNormalized	0.975	0.968	0.980	0.969	0.918	0.958	0.967	0.956	0.971	0.974	0.963	0.979	0.953	0.949	0.961
glrm	GrayLevelVariance	0.933	0.943	0.955	0.996	0.991	0.997	0.994	0.989	0.995	0.914	0.856	0.919	0.914	0.900	0.912
glrm	HighGrayLevelRunEmphasis	0.911	0.932	0.945	0.983	0.974	0.986	0.973	0.965	0.986	0.962	0.968	0.981	0.907	0.900	0.917
glrm	LongRunEmphasis	0.741	0.813	0.832	0.978	0.960	0.983	0.960	0.927	0.978	0.897	0.886	0.840	0.820	0.911	0.926
glrm	LongRunHighGrayLevelEmphasis	0.950	0.866	0.872	0.955	0.916	0.959	0.942	0.892	0.953	0.930	0.911	0.842	0.830	0.880	0.928
glrm	LongRunLowGrayLevelEmphasis	0.922	0.849	0.859	0.99											

(B) Heatmap of intra-system reproducibility by CCC

		PCD-CT			dsDECT			rsDECT			dtDECT			ssDECT		
		5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy	5 vs 10 mGy	5 vs 20 mGy	10 vs 20 mGy
firstorder	10Percentile	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
	90Percentile	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
	Energy	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Entropy	0.977	0.973	0.984	0.988	0.976	0.994	0.989	0.981	0.993	0.963	0.946	0.971	0.934	0.931	0.946
firstorder	InterquartileRange	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.997	0.997	0.998	1.000	0.980	0.980
firstorder	Kurtosis	0.994	0.981	0.992	0.998	0.996	0.999	0.997	0.996	0.999	0.962	0.961	0.981	0.990	0.964	0.981
firstorder	Maximum	1.000	1.000	1.000	0.999	0.999	1.000	0.999	0.999	1.000	1.000	1.000	1.000	1.000	0.998	0.998
firstorder	MeanAbsoluteDeviation	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.998	0.998	0.999	1.000	0.983	0.983
firstorder	Mean	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Median	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Minimum	1.000	1.000	1.000	0.988	0.976	0.993	0.990	0.988	0.995	0.999	0.999	0.999	1.000	0.996	0.996
firstorder	Range	0.999	0.999	0.999	0.999	0.997	0.999	0.999	0.998	0.999	0.996	0.997	0.998	0.999	0.986	0.985
firstorder	RobustMeanAbsoluteDeviation	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.997	0.997	0.998	1.000	0.981	0.982
firstorder	RootMeanSquared	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	0.999	0.999
firstorder	Skewness	0.988	0.981	0.993	0.999	0.998	0.998	1.000	0.999	1.000	0.991	0.988	0.995	0.972	0.968	0.975
firstorder	TotalEnergy	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.998	1.000	1.000	1.000	1.000	1.000	1.000	1.000
firstorder	Uniformity	0.966	0.934	0.967	0.985	0.968	0.990	0.982	0.970	0.986	0.966	0.928	0.969	0.954	0.945	0.960
firstorder	Variance	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	1.000	0.995	0.997	0.997	1.000	0.968	0.968
glm	Autocorrelation	0.907	0.929	0.945	0.998	0.997	0.999	0.998	0.998	0.999	0.965	0.970	0.983	0.910	0.906	0.920
glm	ClusterProminence	0.903	0.903	0.939	0.997	0.996	0.998	0.998	0.997	0.997	0.956	0.910	0.951	0.915	0.907	0.916
glm	ClusterShade	0.927	0.918	0.961	0.999	0.999	0.999	0.999	0.999	0.999	0.986	0.970	0.986	0.942	0.943	0.927
glm	ClusterTendency	0.942	0.945	0.966	0.999	0.998	0.999	0.999	0.998	0.999	0.947	0.923	0.946	0.928	0.925	0.938
glm	Contrast	0.969	0.966	0.986	0.991	0.982	0.993	0.994	0.991	0.996	0.934	0.939	0.961	0.943	0.909	0.920
glm	Correlation	0.972	0.955	0.994	0.998	0.994	0.999	0.999	0.997	0.999	0.989	0.984	0.995	0.924	0.964	0.945
glm	DifferenceAverage	0.970	0.961	0.986	0.995	0.989	0.997	0.993	0.988	0.995	0.964	0.960	0.978	0.944	0.934	0.939
glm	DifferenceEntropy	0.969	0.952	0.983	0.992	0.984	0.995	0.989	0.981	0.994	0.969	0.956	0.978	0.938	0.942	0.947
glm	DifferenceVariance	0.964	0.961	0.981	0.992	0.984	0.994	0.995	0.993	0.997	0.901	0.884	0.934	0.938	0.901	0.915
glm	Id	0.968	0.947	0.983	0.993	0.987	0.996	0.990	0.983	0.993	0.972	0.942	0.974	0.933	0.949	0.949
glm	Idm	0.968	0.948	0.983	0.994	0.989	0.997	0.992	0.985	0.994	0.975	0.949	0.978	0.933	0.950	0.949
glm	Idmm	0.970	0.965	0.986	0.992	0.982	0.994	0.993	0.990	0.996	0.942	0.946	0.967	0.944	0.915	0.925
glm	Idn	0.970	0.958	0.986	0.995	0.990	0.997	0.992	0.987	0.995	0.969	0.961	0.980	0.943	0.939	0.942
glm	Imc1	0.930	0.851	0.969	0.995	0.990	0.996	0.989	0.981	0.996	0.976	0.924	0.969	0.891	0.964	0.940
glm	Imc2	0.970	0.947	0.991	0.996	0.989	0.996	0.993	0.989	0.996	0.987	0.979	0.993	0.918	0.963	0.941
glm	InverseVariance	0.908	0.856	0.945	0.975	0.958	0.986	0.975	0.958	0.983	0.913	0.745	0.831	0.937	0.922	0.928
glm	JointAverage	0.927	0.945	0.958	0.999	0.998	0.999	0.999	0.999	0.999	0.974	0.976	0.987	0.921	0.916	0.928
glm	JointEntropy	0.919	0.822	0.911	0.983	0.963	0.986	0.976	0.960	0.981	0.947	0.843	0.932	0.952	0.939	0.934
glm	JointEntropy	0.976	0.969	0.983	0.991	0.982	0.995	0.991	0.983	0.992	0.968	0.941	0.972	0.934	0.936	0.949
glm	MCC	0.974	0.957	0.992	0.996	0.991	0.997	0.997	0.995	0.998	0.986	0.982	0.991	0.930	0.956	0.952
glm	MaximumProbability	0.937	0.884	0.940	0.980	0.965	0.985	0.973	0.961	0.978	0.926	0.839	0.922	0.911	0.905	0.938
glm	SumAverage	0.927	0.945	0.958	0.999	0.998	0.999	0.999	0.999	0.999	0.974	0.976	0.987	0.921	0.916	0.928
glm	SumEntropy	0.977	0.969	0.983	0.985	0.971	0.992	0.986	0.973	0.991	0.963	0.940	0.969	0.934	0.937	0.944
glm	SumSquares	0.944	0.953	0.964	0.999	0.997	0.999	0.999	0.998	0.998	0.921	0.899	0.926	0.932	0.915	0.930
glm	DependenceEntropy	0.950	0.902	0.952	0.977	0.956	0.985	0.970	0.945	0.980	0.948	0.928	0.956	0.903	0.912	0.924
glm	DependenceNonUniformity	0.949	0.877	0.929	0.962	0.927	0.971	0.950	0.908	0.972	0.954	0.944	0.970	0.916	0.917	0.922
glm	DependenceNonUniformityNormalized	0.949	0.877	0.929	0.962	0.927	0.971	0.950	0.908	0.972	0.954	0.944	0.970	0.916	0.917	0.922
glm	DependenceVariance	0.939	0.890	0.948	0.980	0.973	0.987	0.974	0.959	0.982	0.904	0.806	0.906	0.872	0.885	0.898
glm	GrayLevelNonUniformity	0.976	0.969	0.983	0.991	0.982	0.995	0.991	0.983	0.992	0.968	0.928	0.969	0.945	0.946	0.960
glm	GrayLevelVariance	0.942	0.952	0.962	0.999	0.998	0.999	0.998	0.998	0.998	0.920	0.898	0.925	0.928	0.911	0.926
glm	HighGrayLevelEmphasis	0.913	0.934	0.947	0.998	0.997	0.999	0.998	0.998	0.999	0.966	0.971	0.983	0.912	0.906	0.921
glm	LargeDependenceEmphasis	0.952	0.902	0.964	0.986	0.977	0.992	0.984	0.972	0.989	0.944	0.843	0.931	0.906	0.942	0.946
glm	LargeDependenceHighGrayLevelEmphasis	0.770	0.768	0.948	0.985	0.981	0.992	0.991	0.989	0.991	0.930	0.858	0.959	0.845	0.898	0.934
glm	LargeDependenceLowGrayLevelEmphasis	0.887	0.899	0.918	0.998	0.999	0.997	0.995	0.993	0.970	0.986	0.966	0.998	0.954	0.945	0.960
glm	LowGrayLevelEmphasis	0.887	0.892	0.886	0.999	0.997	0.998	0.998	0.997	0.999	0.922	0.822	0.883	0.900	0.892	0.971
glm	SmallDependenceEmphasis	0.961	0.947	0.981	0.995	0.990	0.996	0.991	0.985	0.994	0.972	0.965	0.981	0.932	0.940	0.936
glm	SmallDependenceHighGrayLevelEmphasis	0.955	0.955	0.974	0.995	0.991	0.995	0.992	0.989	0.994	0.964	0.966	0.979	0.925	0.908	0.927
glm	SmallDependenceLowGrayLevelEmphasis	0.671	0.716	0.762	0.977	0.966	0.982	0.981	0.974	0.990	0.834	0.842	0.847	0.682	0.692	0.766
glm	GrayLevelNonUniformityNormalized	0.894	0.835	0.909	0.978	0.956	0.978	0.967	0.946	0.969	0.934	0.871	0.914	0.815	0.819	0.916
glm	GrayLevelVariance	0.933	0.943	0.955	0.996	0.991	0.997	0.994	0.989	0.995	0.914	0.856	0.919	0.913	0.900	0.912
glm	HighGrayLevelRunEmphasis	0.910	0.932	0.945	0.983	0.974	0.986	0.972	0.964	0.986	0.962	0.968	0.981	0.907	0.900	0.916
glm	LongRunHighGrayLevelEmphasis	0.740	0.812	0.831	0.976	0.960	0.983	0.960	0.927	0.977	0.897	0.685	0.819	0.920	0.910	0.926
glm	LongRunHighGrayLevelEmphasis	0.549	0.385	0.671	0.955	0.936	0.959	0.943	0.892	0.913	0.929	0.911	0.942	0.830	0.880	0.927
glm	LowGrayLevelRunEmphasis	0.921	0.948	0.938	0.990	0.974	0.991	0.973	0.961	0.996	0.848	0.567	0.777	0.926	0.886	0.951
glm	LowGrayLevelRunEmphasis	0.897	0.874	0.874	0.994	0.980	0.992	0.993	0.990	0.997	0.924	0.852	0.900	0.914	0.902	0.971
glm	RunEntropy	0.898	0.823	0.942	0.985	0.977	0.987	0.970	0.953	0.976	0.938	0.870	0.938	0.858	0.912	0.894
glm	RunLengthNonUniformity	0.965	0.944	0.981	0.996	0.993	0.997	0.993	0.988	0.995	0.972	0.946	0.975	0.924	0.944	0.943
glm	RunLengthNonUniformityNormalized	0.965	0.941	0.980	0.993	0.990	0.995	0.989	0.986	0.993	0.973	0.943	0.973	0.922	0.945	0.945
glm	RunPercentage	0.963	0.929	0.976	0.990	0.983	0.995	0.988	0.979	0.991	0.962	0.899	0.956	0.916	0.947	0.947
glm	RunVariance	0.697	0.267	0.490	0.978	0.960	0.983	0.962	0.934	0.978	0.853	0.598	0.782	0.918	0.857	0.887
glm	ShortRunEmphasis	0.966	0.937	0.978	0.992	0.989	0.993	0.987	0.984	0.992	0.970	0.925	0.964	0.918	0.948	0.949
glm	ShortRunHighGrayLevelEmphasis	0.929	0.943	0.954	0.987	0.980	0.988	0.977	0.970	0.987	0.864	0.668	0.861	0.908	0.895	0.908
glm	ShortRunLowGrayLevelEmphasis	0.818	0.832	0.878	0.9											

Supplementary Figure 3 Heatmap of inter-system reproducibility within the same dose level

The heatmap of radiomics features in terms of inter-system reproducibility among five scanners within the same dose level of 5 mGy, 10 mGy, and 20 mGy, according to ICC and CCC values. PCD-CT = photon counting detector CT, dsDECT = dual-source dual-energy CT, rsDECT = rapid kV-switching dual-energy CT, diDECT = dual-layer dual-energy CT, ssDECT = sequential scanning DECT, ICC = intraclass correlation coefficient, CCC = concordance correlation coefficient.

(A) Heatmap of inter-system reproducibility by ICC

	PCD-CT vs dsDECT				PCD-CT vs rsDECT				PCD-CT vs diDECT				dsDECT vs rsDECT				dsDECT vs diDECT				rsDECT vs diDECT				diDECT vs ssDECT				ssDECT vs rsDECT			
	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy	5mGy	10mGy	20mGy		
Firstorder	0.086	0.087	0.086	0.114	0.115	0.115	0.113	0.113	0.113	0.093	0.039	0.034	0.618	0.617	0.617	0.021	0.008	0.067	0.093	0.074	0.083	0.154	0.152	0.151	0.119	0.119	0.127	0.136	0.134	0.129		
Firstorder	0.082	0.078	0.078	0.118	0.117	0.111	0.236	0.236	0.297	0.075	0.074	0.075	0.088	0.086	0.088	0.329	0.334	0.334	0.222	0.224	0.230	0.163	0.161	0.161	0.276	0.275	0.281	0.253	0.253	0.250		
Firstorder	0.469	0.470	0.471	0.509	0.504	0.498	0.395	0.395	0.395	0.336	0.334	0.335	0.676	0.668	0.660	0.338	0.336	0.336	0.511	0.512	0.513	0.209	0.205	0.202	0.403	0.397	0.388	0.416	0.416	0.415		
Firstorder	0.145	0.138	0.138	0.061	0.060	0.060	0.088	0.088	0.087	0.096	0.090	0.088	0.093	0.717	0.756	0.771	0.078	0.090	0.109	0.086	0.079	0.091	0.075	0.091	0.116	0.047	0.042	0.054	0.029	0.086	0.042	
Firstorder	0.002	0.002	0.002	0.054	0.054	0.054	0.002	0.002	0.002	0.002	0.002	0.002	0.154	0.154	0.154	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002		
Firstorder	0.097	0.105	0.107	0.012	0.020	0.027	0.058	0.058	0.065	0.020	0.029	0.022	0.084	0.121	0.140	0.290	0.276	0.267	0.109	0.119	0.102	0.159	0.138	0.144	0.060	0.045	0.048	0.051	0.066	0.061		
Firstorder	0.064	0.063	0.066	0.472	0.468	0.462	0.291	0.289	0.290	0.086	0.086	0.086	0.094	0.093	0.092	0.309	0.313	0.310	0.258	0.256	0.264	0.139	0.134	0.131	0.258	0.256	0.258	0.247	0.247	0.251	0.242	
Firstorder	0.002	0.002	0.002	0.023	0.028	0.028	0.002	0.002	0.002	0.002	0.002	0.002	0.144	0.144	0.144	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002		
Firstorder	0.007	0.007	0.007	0.037	0.037	0.035	0.228	0.228	0.229	0.085	0.084	0.084	0.296	0.256	0.255	0.284	0.185	0.185	0.177	0.179	0.179	0.244	0.242	0.241	0.157	0.158	0.157	0.221	0.220	0.222		
Firstorder	0.008	0.009	0.010	0.043	0.043	0.043	0.242	0.242	0.243	0.083	0.083	0.082	0.297	0.294	0.294	0.115	0.116	0.118	0.120	0.124	0.123	0.280	0.278	0.277	0.050	0.052	0.050	0.233	0.232	0.235		
Firstorder	0.006	0.006	0.006	0.004	0.004	0.004	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009		
Firstorder	0.018	0.018	0.018	0.015	0.013	0.007	0.120	0.126	0.120	0.397	0.402	0.366	0.224	0.202	0.202	0.002	0.002	0.003	0.096	0.092	0.113	0.024	0.023	0.022	0.095	0.094	0.113	0.012	0.002	0.003		
Firstorder	0.016	0.016	0.016	0.002	0.003	0.004	0.008	0.148	0.153	0.151	0.528	0.527	0.486	0.024	0.024	0.026	0.018	0.016	0.016	0.064	0.064	0.081	0.025	0.024	0.023	0.036	0.035	0.046	0.040	0.046	0.038	
Firstorder	0.126	0.125	0.126	0.399	0.397	0.395	0.178	0.179	0.179	0.379	0.379	0.379	0.281	0.281	0.281	0.385	0.379	0.379	0.237	0.237	0.237	0.445	0.445	0.445	0.322	0.322	0.322	0.452	0.452	0.450		
Firstorder	0.144	0.138	0.144	0.335	0.305	0.116	0.226	0.204	0.209	0.090	0.090	0.089	0.592	0.603	0.608	0.317	0.307	0.308	0.015	0.010	0.014	0.107	0.077	0.078	0.155	0.200	0.193	0.071	0.057	0.053		
Firstorder	0.469	0.470	0.471	0.509	0.504	0.498	0.395	0.395	0.395	0.336	0.334	0.335	0.676	0.668	0.660	0.338	0.336	0.336	0.511	0.512	0.513	0.209	0.205	0.202	0.403	0.397	0.388	0.416	0.416	0.415		
Firstorder	0.008	0.007	0.008	0.002	0.003	0.004	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009		
Firstorder	0.014	0.014	0.014	0.017	0.017	0.017	0.083	0.084	0.083	0.561	0.562	0.486	0.033	0.033	0.033	0.003	0.003	0.003	0.033	0.033	0.045	0.003	0.003	0.003	0.039	0.039	0.052	0.024	0.028	0.019		
gcm	0.018	0.003	0.006	0.123	0.064	0.082	0.558	0.518	0.551	0.245	0.211	0.278	0.599	0.595	0.592	0.026	0.011	0.019	0.048	0.047	0.038	0.029	0.033	0.032	0.151	0.191	0.174	0.176	0.181	0.192		
gcm	0.009	0.009	0.009	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002		
gcm	0.002	0.013	0.017	0.006	0.004	0.004	0.174	0.161	0.137	0.340	0.297	0.328	0.499	0.498	0.505	0.063	0.064	0.061	0.023	0.034	0.012	0.035	0.036	0.041	0.002	0.009	0.000	0.181	0.141	0.179		
gcm	0.027	0.017	0.026	0.019	0.011	0.009	0.002	0.002	0.002	0.047	0.239	0.112	0.158	0.151	0.158	0.010	0.020	0.028	0.018	0.017	0.026	0.012	0.014	0.010	0.017	0.013	0.024	0.148	0.103	0.107		
gcm	0.006	0.002	0.006	0.074	0.008	0.092	0.163	0.208	0.202	0.355	0.395	0.517	0.630	0.622	0.628	0.131	0.130	0.131	0.002	0.002	0.002	0.124	0.144	0.144	0.019	0.009	0.008	0.001	0.008	0.001		
gcm	0.040	0.067	0.079	0.081	0.094	0.106	0.134	0.220	0.247	0.411	0.489	0.532	0.652	0.642	0.659	0.022	0.016	0.012	0.201	0.275	0.244	0.018	0.028	0.033	0.122	0.155	0.147	0.229	0.201	0.257		
gcm	0.096	0.117	0.131	0.092	0.109	0.121	0.016	0.009	0.008	0.352	0.395	0.495	0.733	0.742	0.743	0.121	0.137	0.154	0.143	0.168	0.166	0.110	0.127	0.144	0.112	0.134	0.121	0.099	0.098	0.101		
gcm	0.316	0.316	0.316	0.374	0.379	0.388	0.109	0.008	0.115	0.306	0.463	0.734	0.742	0.743	0.745	0.099	0.109	0.130	0.172	0.214	0.097	0.178	0.197	0.169	0.096	0.104	0.107	0.096	0.094	0.094		
gcm	0.358	0.390	0.414	0.346	0.405	0.425	0.332	0.415	0.427	0.444	0.507	0.612	0.649	0.646	0.656	0.182	0.221	0.224	0.090	0.135	0.118	0.219	0.232	0.259	0.135	0.178	0.181	0.270	0.309	0.387		
gcm	0.140	0.133	0.152	0.107	0.136	0.154	0.155	0.170	0.183	0.244	0.276	0.351	0.725	0.743	0.749	0.114	0.134	0.168	0.096	0.111	0.117	0.109	0.132	0.169	0.088	0.106	0.095	0.149	0.142	0.154		
gcm	0.107	0.117	0.116	0.108	0.116	0.125	0.138	0.135	0.145	0.185	0.221	0.243	0.746	0.759	0.761	0.121	0.143	0.161	0.098	0.116	0.118	0.120	0.135	0.149	0.119	0.104	0.103	0.143	0.135	0.135		
gcm	0.002	0.002	0.003	0.028	0.035	0.035	0.125	0.168	0.162	0.362	0.408	0.521	0.683	0.678	0.676	0.111	0.127	0.130	0.111	0.135	0.114	0.110	0.127	0.129	0.058	0.054	0.045	0.015	0.002	0.018		
gcm	0.108	0.133	0.150	0.106	0.129	0.143	0.057	0.049	0.057	0.138	0.385	0.480	0.752	0.763	0.764	0.124	0.140	0.161	0.137	0.138	0.161	0.112	0.130	0.152	0.111	0.136	0.124	0.019	0.036	0.035		
gcm	0.006	0.006	0.006	0.115	0.092	0.126	0.145	0.092	0.120	0.358	0.420	0.537	0.751	0.752	0.751	0.120	0.145	0.169	0.127	0.131	0.152	0.092	0.112	0.128	0.109	0.118	0.109	0.012	0.012	0.012		
gcm	0.007	0.003	0.001	0.042	0.023	0.044	0.101	0.129	0.138	0.463	0.553	0.588	0.837	0.837	0.831																	

(B) Heatmap of inter-system reproducibility by CCC

		PDD-CT vs hDECT						PDD-CT vs iDECT						PDD-CT vs sDECT						hDECT vs hDECT						hDECT vs iDECT						hDECT vs sDECT						iDECT vs hDECT						iDECT vs iDECT						iDECT vs sDECT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		5 mcy		10 mcy		20 mcy		5 mcy		10 mcy		20 mcy		5 mcy		10 mcy		20 mcy		5 mcy		10 mcy		20 mcy		5 mcy		10 mcy		20 mcy		5 mcy		10 mcy		20 mcy		5 mcy		10 mcy		20 mcy																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy	5 mcy	10 mcy	20 mcy																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
frstorder	LOPeronle	0.086	0.087	0.086	0.114	0.114	0.114	0.112	0.112	0.112	0.041	0.039	0.034	0.617	0.616	0.616	0.071	0.068	0.067	0.073	0.073	0.083	0.153	0.151	0.150	0.119	0.119	0.127	0.115	0.113	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.

Supplementary Figure 4 Heatmap of inter-system variability among five scanners according to materials
The heatmap of radiomics features in terms of inter-system variability among five scanners within the same dose level of 5 mGy, 10 mGy, and 20 mGy, according to CV and QCD values. PCD-CT = photon counting detector CT, dsDECT = dual-source dual-energy CT, rsDECT = rapid kV-switching dual-energy CT, dlDECT = dual-layer dual-energy CT, ssDECT = sequential scanning DECT, CV = coefficient of variation, QCD = quartile coefficient of dispersion.

(A) Heatmap of inter-system variability at 5 mGy by CV

	ROL1	ROL2	ROL3	ROL4	ROL5	ROL6	ROL7	ROL8	ROL9	ROL10	ROL11	ROL12	ROL13	ROL14	ROL15	ROL16	ROL17	ROL18	ROL19	ROL20	ROL21	ROL22	ROL23	ROL24	ROL25	ROL26	ROL27	ROL28		
f1storder	10Percentile	20%	46%	47%	53%	58%	69%	68%	23%	51%	46%	15%	53%	53%	48%	21%	91%	86%	51%	18%	16%	24%	61%	66%	177%	215%	53%	258%	227%	44%
f1storder	50Percentile	403%	237%	376%	187%	117%	142%	135%	328%	189%	159%	154%	104%	57%	118%	580%	550%	5336%	670%	45%	846%	1636%	85%	205%	1295%	1034%	1087%	283%	232%	
f1storder	Energy	73%	140%	145%	118%	109%	112%	164%	51%	116%	127%	55%	52%	65%	90%	85%	87%	73%	135%	52%	90%	78%	43%	48%	53%	75%	77%	73%	65%	
f1storder	Entropy	7%	5%	9%	16%	13%	10%	12%	21%	12%	13%	12%	18%	16%	9%	14%	16%	23%	26%	20%	32%	30%	39%	27%	37%	36%	38%	40%	30%	
f1storder	InterquartileRange	5%	73%	65%	88%	73%	113%	60%	99%	110%	83%	24%	25%	57%	67%	103%	77%	110%	85%	81%	49%	371%	111%	49%	183%	160%	163%	166%	193%	
f1storder	Kurtosis	63%	32%	45%	88%	55%	78%	59%	209%	44%	28%	34%	32%	67%	36%	227%	49%	42%	50%	48%	36%	131%	159%	90%	110%	27%	44%	46%	75%	
f1storder	Maximum	3019%	952%	726%	999%	215%	207%	237%	2927%	494%	784%	132%	247%	143%	419%	221%	1086%	910%	358%	86%	33326%	339%	122%	359%	404%	4903%	502%	184%	384%	
f1storder	MeanAbsoluteDeviation	5%	22%	36%	23%	36%	29%	33%	9%	102%	65%	19%	68%	52%	61%	100%	16%	13%	21%	62%	114%	43%	63%	174%	143%	140%	108%	127%		
f1storder	Mean	60%	94%	108%	87%	74%	80%	94%	50%	77%	74%	43%	40%	47%	62%	197%	131%	198%	413%	30%	307%	180%	74%	192%	304%	67%	353%	315%	54%	
f1storder	Median	68%	104%	121%	90%	76%	77%	97%	42%	77%	74%	48%	69%	46%	65%	285%	129%	352%	1805%	37%	503%	361%	74%	189%	228%	57%	288%	251%	46%	
f1storder	Minimum	3%	33%	9%	22%	37%	62%	45%	10%	27%	25%	20%	37%	43%	34%	63%	48%	38%	37%	23%	18%	50%	4%	167%	197%	51%	217%	195%	38%	
f1storder	Range	42%	68%	43%	44%	66%	83%	70%	72%	62%	54%	11%	41%	53%	48%	70%	40%	95%	95%	43%	82%	32%	66%	127%	116%	81%	105%	120%		
f1storder	RobustMeanAbsoluteDeviation	54%	73%	63%	91%	78%	124%	60%	100%	120%	74%	22%	50%	55%	65%	105%	79%	117%	156%	78%	79%	145%	90%	52%	187%	153%	132%	119%	189%	
f1storder	RootMeanSquared	38%	68%	72%	68%	68%	77%	88%	34%	63%	60%	29%	31%	47%	52%	59%	52%	45%	68%	26%	49%	61%	30%	42%	44%	57%	50%	52%	46%	
f1storder	Skewness	272%	137%	307%	1241%	630%	119%	711%	318%	216%	749%	244%	89%	171%	129%	410%	459%	538%	162%	138%	118%	242%	166%	131%	111%	142%	92%	263%	383%	
f1storder	TotalEnergy	73%	140%	145%	118%	109%	112%	164%	51%	116%	127%	55%	52%	65%	90%	85%	87%	73%	135%	52%	90%	78%	43%	48%	53%	75%	77%	73%	65%	
f1storder	Uniformity	26%	17%	27%	38%	41%	29%	32%	53%	43%	44%	35%	62%	46%	26%	42%	46%	60%	64%	63%	90%	70%	62%	60%	67%	72%	80%	79%	57%	
f1storder	Variance	59%	86%	77%	97%	114%	129%	99%	114%	142%	100%	32%	144%	78%	89%	116%	88%	139%	192%	169%	145%	166%	82%	124%	199%	127%	131%	149%	200%	
g1cm	AutoCorrelation	39%	41%	55%	45%	54%	44%	48%	48%	21%	25%	44%	28%	24%	22%	36%	21%	46%	43%	30%	45%	66%	83%	55%	31%	46%	46%	61%		
g1cm	ClusterProminence	64%	39%	55%	94%	119%	71%	101%	101%	154%	48%	54%	180%	42%	46%	112%	114%	105%	136%	43%	143%	115%	106%	88%	157%	117%	109%	113%	142%	
g1cm	ClusterShade	394%	457%	451%	481%	173%	96%	481%	157%	242%	904%	154%	190%	230%	84%	220%	151%	536%	167%	131%	182%	754%	135%	133%	159%	124%	137%	129%	173%	
g1cm	ClusterTexture	50%	21%	41%	94%	69%	64%	28%	83%	111%	33%	34%	88%	38%	31%	95%	95%	82%	97%	34%	54%	82%	60%	31%	115%	95%	79%	85%	117%	
g1cm	Contrast	3%	29%	45%	64%	52%	67%	49%	60%	53%	49%	55%	59%	41%	36%	63%	42%	43%	83%	43%	57%	53%	63%	43%	36%	46%	42%	63%	58%	47%
g1cm	Correlation	13%	16%	17%	37%	33%	34%	32%	31%	36%	16%	30%	61%	20%	31%	53%	39%	18%	47%	44%	19%	26%	36%	11%	21%	25%	22%	25%	18%	
g1cm	DifferenceEntropy	11%	11%	15%	26%	22%	21%	16%	23%	22%	15%	19%	27%	17%	22%	20%	29%	31%	39%	28%	36%	32%	34%	38%	35%	45%	40%	46%	28%	
g1cm	DifferenceVariance	17%	21%	33%	41%	32%	34%	34%	40%	32%	31%	43%	47%	21%	18%	46%	16%	20%	53%	38%	28%	39%	51%	66%	70%	25%	40%	32%	70%	
g1cm	Id	16%	13%	17%	27%	23%	20%	18%	21%	28%	20%	24%	31%	21%	27%	23%	31%	26%	36%	28%	23%	28%	21%	25%	30%	29%	30%	22%	22%	
g1cm	Idm	24%	20%	24%	30%	24%	20%	24%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	
g1cm	Idm1	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
g1cm	Idm2	3%	2%	3%	4%	3%	3%	3%	3%	4%	3%	4%	3%	4%	4%	3%	3%	6%	4%	3%	3%	4%	2%	3%	4%	4%	4%	4%	3%	
g1cm	Invol	33%	45%	55%	29%	72%	63%	50%	63%	73%	60%	63%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	
g1cm	Invol2	7%	12%	14%	21%	20%	20%	17%	15%	20%	11%	19%	28%	14%	26%	28%	22%	10%	22%	24%	11%	15%	18%	9%	11%	12%	9%	10%		
g1cm	InverseVariance	24%	10%	15%	26%	20%	10%	12%	35%	18%	15%	17%	27%	6%	7%	16%	28%	51%	41%	15%	44%	45%	45%	22%	55%	67%	58%	67%	42%	
g1cm	JointAverage	22%	32%	36%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	33%	42%	
g1cm	JointEntropy	69%	56%	55%	87%	104%	57%	72%	91%	103%	97%	91%	151%	90%	83%	85%	107%	109%	117%	124%	143%	121%	92%	94%	105%	112%	115%	116%	105%	
g1cm	JointEntropy	11%	8%	12%	23%	20%	16%	15%	27%	20%	16%	16%	25%	20%	17%	18%	28%	34%	37%	27%	39%	37%	42%	30%	45%	48%	47%	51%	37%	
g1cm	MQC	13%	18%	20%	34%	30%	33%	34%	17%	33%	17%	32%	49%	23%	37%	43%	35%	16%	38%	38%	18%	23%	29%	10%	16%	11%	17%	19%	13%	
g1cm	MaximumProbability	68%	40%	40%	96%	86%	86%	86%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
g1cm	SumAverage	25%	27%	24%	32%	36%	29%	33%	34%	12%	13%	8%	12%	13%	12%	23%	16%	23%	21%	22%	23%	43%	60%	51%	44%	31%	42%	44%	48%	
g1cm	SumEntropy	6%	4%	8%	14%	11%	8%	9%	21%	11%	12%	9%	15%	14%	8%	11%	15%	24%	25%	19%	32%	29%	34%	22%	36%	37%	39%	42%	28%	
g1cm	SumSquares	42%	25%	25%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	26%	29%	
g1cm	DependenceEntropy	3%	2%	4%	4%	4%	5%	2%	15%	4%	4%	2%	8%	4%	5%	5%	8%	18%	17%	9%	24%	21%	21%	10%	27%	31%	31%	34%	19%	
g1cm	DependenceNonUniformity	17%	17%	27%	35%	31%	34%	27%	15%	34%	36%	33%	24%	33%	38%	31%	21%	21%	35%	31%	42%	38%	28%	29%	52%	39%	34%	43%	36%	
g1cm	DependenceNonUniformityNormalized	24%	17%	27%	35%	31%	34%	27%	15%	34%	36%	33%	24%	33%	38%	31%	21%	21%	35%	31%	42%	38%	28%	29%	52%	39%	34%	43%	36%	
g1cm	DependenceVariance	65%	35%	47%	54%	52%	47%	70%	85%	78%	91%	58%	67%	55%	80%	78%	62%	75%	60%	59%	54%	66%	59%	7%	51%	57%	53%	49%		
g1cm	GrayLevelNonUniformity	26%	17%	27%	35%	31%	34%	27%	15%	34%	36%	33%	24%	33%	38%	31%	21%	21%	35%	31%	42%	38%	28%	29%	52%	39%	34%	43%	36%	
g1cm	GrayLevelVariance	46%	20%	41%	79%	56%	52%	77%	78%	94%	34%	38%	67%	34%	29%	84%	87%	76%	79%	28%	50%	77%	50%	77%	50%	105%	89%	73%	17%	106%
g1cm	HighGrayLevelEmphasis	48%	40%	40%	53%	41%	40%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	48%	21%	
g1cm	LargeDependenceEmphasis	49%	42%	40%	81%	80%	54%	49%	66%	85%	67%	77%	109%	68%	81%	68%	90%	83%	95%	82%	86%	74%	73%	66%	80%	88%	84%	87%	75%	
g1cm	LargeDependenceHighGrayLevelEmphasis	45%	41%	47%	95%	61%	95%	71%	44%	91%	67%	75%	133%	47%	66%	51%	88%	123%	112%	103%	118%	133%	98%	59%	116%	97%	46%	51%	76%	
g1cm	LargeDependenceLowGrayLevelEmphasis	117%	131%	153%	128%	128%	126%	182%	119%	161%	60%	67%	196%	74%	98%	115%	126%	189%	99%	68%	67%	190%	121%	119%	122%	123%	124%	124%	124%	
g1cm	LowGrayLevelEmphasis	90%	93%	97%	100%	88%	110%	141%	105%	87%	45%	32%	84%	29%	40%	93%	111%	151%	42%	77%	49%	160%	113%	106%	110%	113%	116%	116%	112%	
g1cm	SmallDependenceEmphasis	30%	26%	33%	58%	49%	55%	37%	46%	48%	36%	37%	49%	42%	51%	46%	59%	57%	70%	53%	60%	65%	70%	51%	62%	67%	73%	73%	60%	
g1cm	SmallDependenceHighGrayLevelEmphasis	42%	41%	42%	70%	65%	78%	45%	56%	50%	42%	30%	42%	48%	61%	40%	65%	54%	66%	57%	55%	85%	91%	69%	76%	72%	68%	78%	74%	
g1cm	SmallDependenceLowGrayLevelEmphasis																													

(B) Heatmap of inter-system variability at 5 mGy by QCD

	ROL1	ROL2	ROL3	ROL4	ROL5	ROL6	ROL7	ROL8	ROL9	ROL10	ROL11	ROL12	ROL13	ROL14	ROL15	ROL16	ROL17	ROL18	ROL19	ROL20	ROL21	ROL22	ROL23	ROL24	ROL25	ROL26	ROL27	ROL28	
f1storder	10Percentile	20%	11%	23%	47%	53%	76%	23%	3%	46%	18%	9%	12%	20%	20%	97%	55%	45%	8%	7%	21%	39%	3%	100%	98%	48%	66%	72%	39%
f1storder	90Percentile	73%	82%	34%	13%	51%	36%	32%	35%	30%	8%	43%	54%	11%	4%	86%	31%	55%	21%	82%	120%	9%	100%	96%	35%	10%	20%	71%	
f1storder	Energy	53%	14%	31%	75%	83%	97%	30%	14%	71%	19%	40%	32%	40%	76%	54%	77%	75%	46%	41%	67%	91%	3%	4%	80%	73%	75%	70%	
f1storder	Entropy	4%	4%	8%	16%	10%	7%	8%	15%	10%	12%	12%	10%	13%	7%	5%	16%	19%	23%	9%	19%	25%	40%	22%	39%	38%	34%	32%	
f1storder	InterquantileRange	29%	81%	37%	59%	63%	68%	43%	58%	58%	2%	21%	33%	43%	84%	67%	93%	35%	12%	60%	35%	13%	34%	35%	14%	42%	25%	57%	
f1storder	Kurtosis	22%	27%	41%	61%	38%	23%	43%	48%	21%	21%	30%	19%	33%	25%	45%	48%	38%	30%	11%	27%	38%	56%	62%	68%	14%	40%	42%	
f1storder	Maximum	25%	524%	22%	157%	344%	328%	992%	1822%	3025%	12871%	77%	164%	91%	579%	70%	270%	5780%	124%	69%	143%	808%	31%	193%	228%	105%	62%	125%	63%
f1storder	MeanAbsoluteDeviation	18%	79%	23%	47%	68%	78%	48%	90%	89%	60%	17%	9%	32%	43%	92%	59%	90%	33%	17%	44%	79%	75%	61%	61%	88%	79%	87%	43%
f1storder	Mean	44%	16%	26%	62%	56%	77%	9%	36%	42%	25%	27%	31%	23%	56%	114%	63%	34%	35%	27%	56%	103%	9%	103%	102%	48%	61%	72%	44%
f1storder	Median	53%	24%	39%	73%	61%	79%	8%	7%	48%	33%	33%	43%	19%	59%	201%	72%	49%	42%	30%	58%	103%	1%	103%	102%	50%	69%	77%	41%
f1storder	Minimum	1%	4%	4%	12%	30%	72%	49%	4%	15%	15%	18%	32%	12%	13%	67%	50%	37%	36%	15%	19%	25%	10%	84%	91%	45%	62%	60%	35%
f1storder	Range	3%	76%	8%	25%	70%	72%	62%	74%	88%	58%	8%	23%	23%	26%	80%	7%	75%	43%	64%	57%	50%	67%	66%	73%	10%	68%	46%	
f1storder	RobustMeanAbsoluteDeviation	25%	81%	34%	56%	73%	73%	43%	92%	88%	59%	22%	9%	38%	47%	94%	69%	93%	25%	10%	38%	69%	55%	33%	38%	88%	66%	73%	52%
f1storder	RootMeanSquared	29%	7%	16%	45%	53%	77%	15%	7%	42%	9%	21%	16%	21%	47%	30%	47%	45%	24%	21%	38%	64%	1%	2%	2%	50%	43%	45%	41%
f1storder	Skewness	253%	85%	28%	113%	191%	127%	63%	244%	211%	903%	35%	135%	47%	258%	302%	121%	152%	148%	99%	189%	128%	107%	84%	146%	198%	173%	121%	17%
f1storder	TotalEnergy	53%	14%	31%	75%	83%	97%	30%	14%	71%	19%	40%	32%	40%	76%	54%	77%	75%	46%	41%	67%	91%	3%	4%	80%	73%	75%	70%	
f1storder	Uniformity	7%	9%	23%	41%	25%	22%	42%	49%	33%	38%	28%	21%	41%	21%	22%	40%	47%	51%	28%	47%	50%	64%	45%	64%	61%	65%	64%	54%
f1storder	Variance	29%	97%	29%	64%	91%	97%	82%	99%	99%	88%	27%	21%	37%	68%	100%	82%	99%	64%	55%	78%	98%	96%	94%	95%	99%	98%	99%	85%
g1cm	Autocorrelation	26%	29%	38%	18%	50%	28%	25%	34%	33%	16%	12%	15%	20%	23%	6%	20%	38%	41%	34%	57%	77%	69%	54%	27%	27%	30%	52%	
g1cm	ClusterProminence	60%	19%	47%	65%	65%	74%	30%	90%	37%	41%	44%	48%	27%	33%	32%	94%	85%	41%	21%	54%	92%	88%	69%	82%	96%	92%	94%	79%
g1cm	ClusterShade	817%	92%	22%	297%	145%	109%	62%	110%	231%	507%	107%	68%	163%	48%	573%	128%	105%	121%	118%	95%	195%	106%	108%	94%	102%	109%	105%	131%
g1cm	ClusterTendency	42%	13%	32%	33%	34%	37%	23%	76%	27%	28%	31%	30%	26%	24%	80%	81%	59%	33%	28%	42%	68%	48%	13%	23%	74%	60%	60%	42%
g1cm	Contrast	24%	22%	36%	60%	41%	47%	40%	35%	52%	42%	59%	60%	38%	30%	52%	36%	38%	72%	53%	46%	35%	13%	27%	40%	32%	22%	42%	37%
g1cm	Correlation	12%	9%	11%	14%	27%	31%	15%	20%	21%	12%	21%	49%	9%	21%	57%	37%	15%	42%	28%	14%	28%	35%	8%	13%	23%	12%	19%	14%
g1cm	DifferenceAverage	20%	13%	31%	42%	27%	39%	25%	35%	42%	34%	40%	37%	34%	38%	38%	50%	52%	67%	45%	52%	41%	20%	36%	59%	48%	56%	22%	
g1cm	DifferenceEntropy	7%	8%	14%	21%	14%	20%	12%	17%	18%	14%	19%	11%	14%	19%	16%	29%	31%	36%	22%	29%	24%	31%	17%	20%	47%	35%	43%	18%
g1cm	DifferenceVariance	10%	12%	28%	29%	29%	26%	26%	15%	29%	25%	42%	47%	13%	11%	35%	9%	14%	46%	27%	14%	23%	36%	54%	21%	16%	32%	23%	31%
g1cm	Id	15%	6%	15%	22%	17%	20%	13%	21%	26%	20%	21%	18%	20%	24%	22%	30%	25%	35%	23%	24%	20%	29%	20%	22%	29%	25%	28%	19%
g1cm	Idn	1%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	2%	1%	1%	0%	0%	1%	1%	0%	0%	1%	
g1cm	Idnn	1%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	2%	1%	1%	0%	0%	1%	1%	0%	0%	1%	
g1cm	Idnn	2%	1%	3%	4%	2%	3%	2%	2%	4%	3%	4%	3%	3%	3%	3%	4%	3%	3%	3%	3%	4%	2%	4%	2%	4%	3%	3%	2%
g1cm	Idnn1	14%	17%	13%	44%	61%	63%	26%	57%	58%	41%	53%	63%	42%	74%	78%	56%	54%	63%	56%	51%	59%	34%	20%	36%	62%	63%	59%	22%
g1cm	Idnn2	6%	5%	7%	12%	19%	18%	8%	10%	17%	11%	16%	55%	7%	24%	29%	22%	7%	15%	14%	8%	15%	14%	8%	9%	10%	4%	8%	10%
g1cm	InverseVariance	14%	7%	15%	20%	18%	7%	10%	31%	11%	7%	6%	8%	4%	5%	9%	27%	55%	12%	9%	25%	38%	61%	21%	39%	70%	58%	70%	25%
g1cm	JointAverage	21%	15%	38%	17%	37%	16%	13%	31%	8%	8%	6%	10%	9%	10%	8%	12%	14%	17%	22%	20%	45%	61%	50%	29%	22%	12%	37%	32%
g1cm	JointEntropy	50%	58%	50%	50%	50%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%
g1cm	JointVariance	10%	4%	12%	12%	15%	9%	25%	20%	16%	17%	14%	18%	14%	13%	29%	33%	34%	18%	27%	31%	46%	26%	42%	53%	45%	48%	36%	
g1cm	MCC	31%	11%	10%	20%	29%	32%	19%	17%	27%	16%	27%	42%	16%	36%	44%	33%	14%	30%	27%	15%	22%	25%	7%	10%	17%	12%	14%	9%
g1cm	MaximumProbability	21%	15%	38%	17%	37%	16%	13%	31%	8%	8%	6%	10%	9%	10%	8%	12%	14%	17%	22%	20%	45%	61%	50%	29%	22%	12%	37%	32%
g1cm	SumAverage	5%	4%	8%	13%	8%	5%	6%	18%	9%	10%	9%	6%	12%	6%	4%	14%	21%	20%	7%	17%	21%	34%	17%	34%	41%	34%	36%	27%
g1cm	SumSquares	36%	10%	31%	23%	25%	29%	23%	72%	31%	30%	38%	24%	22%	24%	71%	75%	64%	43%	21%	39%	59%	34%	14%	28%	70%	52%	51%	40%
g1cm	DependenceEntropy	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%
g1cm	DependenceNonUniformity	19%	9%	20%	32%	27%	31%	23%	8%	36%	36%	27%	23%	35%	40%	29%	16%	14%	25%	28%	14%	21%	24%	28%	16%	32%	25%	31%	20%
g1cm	DependenceNonUniformityNormalized	19%	9%	20%	32%	27%	31%	23%	8%	36%	36%	27%	23%	35%	40%	29%	16%	14%	25%	28%	14%	21%	24%	28%	16%	32%	25%	31%	20%
g1cm	GrayLevelDependence	47%	20%	64%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%
g1cm	GrayLevelNonUniformity	27%	9%	23%	41%	25%	22%	42%	49%	33%	38%	28%	21%	41%	21%	22%	40%	47%	51%	28%	47%	50%	64%	45%	64%	61%	65%	64%	54%
g1cm	GrayLevelVariance	36%	10%	30%	23%	24%	30%	23%	72%	30%	29%	38%	24%	22%	24%	71%	75%	64%	39%	22%	39%	60%	33%	12%	25%	70%	53%	52%	37%
g1cm	HighGrayLevelEmphasis	23%	14%	30%	79%	78%	31%	40%	92%	36%	26%	27%	60%	22%	30%	85%	92%	27%	22%	53%	37%	52%	96%	88%	93%	94%	95%	95%	85%
g1cm	LargeDependenceEmphasis	50%	15%	36%	56%	49%	57%	41%	65%	73%	60%	50%	42%	60%	68%	65%	76%	72%	80%	63%	68%	63%	77%	63%	68%	77%	72%	76%	60%
g1cm	LargeDependenceHighGrayLevelEmphasis	34%	37%	33%	72%	51%	56%	58%	34%	71%	53%	53%	57%	39%	56%	45%	76%	76%	90%	85%	82%	27%	69%	53%	39%	46%	34%	49%	63%
g1cm	LargeDependenceLowGrayLevelEmphasis	88%	44%	35%	94%	93%	78%	19%	99%	68%	58%	35%	21%	70%	81%	99%	99%	68%	44%	36%	43%	70%	100%	98%	99%	99%	99%	99%	99%
g1cm	LowGrayLevelEmphasis	83%	14%	30%	79%	78%	31%	40%	92%	36%	26%	27%	60%	22%	30%	85%	92%	27%	22%	53%	37%	52%	96%	88%	93%	94%	95%	95%	85%
g1cm	SmallDependenceEmphasis	23%	13%	30%	45%	40%	49%	24%	39%	40%	40%	37%	41%	52%	42%	64%	61%	70%	51%	58%	57%	60%	50%	55%	75%	68%	73%	54%	
g1cm	SmallDependenceHighGrayLevelEmphasis	66%	22%	22%	75%	66%	67%	13%	31%	55%	38%	29%	19%	39%	66%	21%	69%	56%	57%	32%	42%	68%	75%	65%	69%	77%	65%	68%	70%
g1cm	SmallDependenceLowGrayLevelEmphasis	7%	40%	44%	31%	33%	53%	59%	21%	37%	38%	54%	38%	38%	23%	17%	27%	20%	72%	69%	65%	37%	51%	36%	30%	27%	33%	26%	27%
g1cm	GrayLevelNonUniformity	21%	5%	17%	21%	7%	13%	10%	36%	22%	7%	7%	11%	12%	19%	21%	34%	45%	19%	13%	25%	27%	27%	18%	14%	54%	42%	56%	27%
g1cm	GrayLevelNonUniformityNormalized	6%	9%	20%	29%	21%	18%	17%	15%	9%	16%	21%	20%	22%	13%	6%	9%	10%	21%	11%	25%	30%	29%	40%	39%	16%	24%		

(C) Heatmap of inter-system variability at 10 mGy by CV

		ROL1	ROL2	ROL3	ROL4	ROL5	ROL6	ROL7	ROL8	ROL9	ROL10	ROL11	ROL12	ROL13	ROL14	ROL15	ROL16	ROL17	ROL18	ROL19	ROL20	ROL21	ROL22	ROL23	ROL24	ROL25	ROL26	ROL27	ROL28	
firstorder	10Percentile	20%	46%	46%	53%	58%	69%	68%	23%	50%	46%	16%	53%	48%	41%	91%	86%	51%	18%	15%	23%	61%	66%	179%	215%	55%	260%	228%	45%	
	90Percentile	409%	242%	386%	187%	118%	142%	137%	332%	189%	161%	153%	107%	57%	115%	562%	563%	7282%	688%	45%	932%	1607%	85%	205%	1244%	989%	1101%	280%	227%	
firstorder	Entropy	7%	5%	9%	16%	14%	11%	13%	20%	12%	13%	12%	17%	17%	10%	14%	20%	24%	27%	22%	34%	33%	44%	29%	38%	37%	41%	41%	31%	
firstorder	InterquartileRange	57%	74%	64%	88%	73%	136%	62%	99%	119%	83%	23%	57%	65%	106%	77%	120%	165%	82%	54%	172%	120%	30%	184%	191%	168%	163%	192%		
firstorder	Kurtosis	64%	23%	44%	86%	54%	82%	63%	204%	42%	29%	34%	31%	68%	27%	224%	48%	41%	50%	49%	36%	116%	154%	307%	110%	29%	51%	70%	4%	
firstorder	Maximum	3410%	919%	739%	1088%	228%	213%	242%	4766%	500%	812%	126%	217%	146%	431%	220%	1213%	895%	367%	88%	6973%	345%	123%	364%	403%	3650%	509%	180%	362%	
firstorder	MeanAbsDeviation	50%	72%	55%	73%	78%	106%	62%	96%	102%	66%	18%	88%	52%	61%	100%	69%	116%	142%	60%	115%	122%	67%	64%	173%	143%	109%	109%	178%	
firstorder	Mean	62%	64%	108%	87%	74%	81%	84%	51%	77%	74%	42%	40%	67%	65%	188%	132%	202%	403%	30%	314%	127%	74%	193%	104%	67%	156%	114%	14%	
firstorder	Median	68%	104%	122%	90%	76%	77%	97%	42%	77%	75%	47%	70%	46%	65%	288%	129%	360%	1843%	38%	524%	357%	74%	190%	218%	57%	250%	250%	46%	
firstorder	Minimum	2%	33%	9%	21%	37%	63%	44%	9%	27%	25%	21%	38%	43%	33%	63%	48%	38%	37%	24%	19%	50%	47%	169%	199%	52%	221%	196%	39%	
firstorder	Range	42%	69%	43%	44%	68%	84%	71%	72%	63%	53%	12%	41%	55%	48%	21%	46%	100%	96%	53%	96%	83%	55%	69%	129%	119%	83%	107%	130%	
firstorder	RobustMeanAbsDeviation	72%	140%	145%	118%	109%	112%	164%	51%	116%	128%	55%	52%	65%	90%	86%	87%	73%	144%	53%	92%	78%	41%	48%	53%	73%	78%	73%	65%	
firstorder	RootMeanSquared	38%	68%	72%	68%	68%	77%	87%	34%	63%	61%	28%	31%	47%	52%	59%	51%	45%	67%	26%	49%	61%	30%	42%	44%	57%	50%	53%	46%	
firstorder	Skewness	685%	584%	340%	1966%	606%	143%	7378%	336%	363%	643%	146%	89%	165%	132%	415%	415%	609%	160%	142%	115%	247%	177%	113%	104%	164%	530%	286%	620%	
firstorder	TotalEnergy	27%	140%	145%	118%	109%	112%	164%	51%	116%	128%	55%	52%	65%	90%	86%	87%	73%	144%	53%	92%	78%	41%	48%	53%	73%	78%	73%	65%	
firstorder	Uniformity	27%	18%	27%	38%	41%	32%	37%	50%	43%	44%	36%	62%	48%	27%	43%	52%	63%	65%	70%	90%	73%	63%	60%	68%	73%	81%	79%	57%	
firstorder	Variance	59%	85%	76%	97%	113%	129%	101%	114%	142%	99%	30%	144%	78%	88%	116%	88%	140%	191%	107%	185%	159%	82%	113%	199%	177%	131%	149%	199%	
gdim	AutoCorrelation	3%	40%	36%	46%	54%	44%	48%	51%	20%	26%	14%	27%	22%	23%	37%	18%	44%	44%	41%	45%	65%	87%	77%	54%	34%	50%	45%	64%	
gdim	ClusterProminence	62%	44%	57%	88%	111%	69%	107%	100%	152%	53%	54%	179%	40%	47%	112%	114%	105%	130%	42%	141%	112%	101%	85%	144%	116%	106%	117%	141%	
gdim	ClusterShade	480%	673%	465%	444%	170%	96%	434%	161%	224%	868%	149%	190%	238%	84%	223%	149%	140%	163%	135%	182%	726%	140%	136%	155%	124%	140%	129%	182%	
gdim	ClusterTendency	49%	21%	44%	90%	66%	61%	27%	84%	110%	36%	35%	86%	38%	32%	94%	95%	81%	93%	34%	54%	77%	58%	29%	111%	93%	73%	83%	116%	
gdim	Contrast	32%	29%	44%	64%	50%	56%	48%	60%	55%	52%	55%	59%	41%	37%	63%	40%	43%	87%	55%	56%	66%	43%	47%	54%	38%	77%	66%	50%	
gdim	Correlation	13%	13%	18%	38%	33%	34%	34%	28%	33%	16%	30%	63%	17%	31%	53%	39%	18%	48%	45%	19%	27%	33%	13%	19%	20%	21%	24%	15%	
gdim	DifferenceEntropy	27%	22%	31%	52%	42%	44%	34%	44%	44%	36%	38%	46%	36%	41%	43%	49%	48%	69%	49%	56%	58%	52%	25%	41%	53%	67%	64%	35%	
gdim	DifferenceEntropy	13%	11%	15%	26%	22%	22%	17%	22%	21%	15%	19%	27%	17%	23%	20%	32%	32%	29%	28%	39%	35%	37%	17%	34%	45%	42%	46%	26%	
gdim	DifferenceVariance	15%	22%	31%	40%	31%	32%	32%	40%	33%	34%	43%	47%	21%	20%	45%	14%	23%	55%	36%	30%	40%	56%	73%	79%	27%	49%	37%	75%	
gdim	IdJ	17%	14%	18%	27%	24%	20%	19%	20%	27%	20%	24%	31%	22%	28%	23%	33%	25%	36%	28%	28%	24%	28%	24%	28%	29%	27%	29%	20%	
gdim	IdJ	23%	21%	26%	35%	31%	27%	27%	24%	35%	26%	33%	41%	29%	37%	50%	42%	30%	45%	36%	33%	29%	35%	27%	27%	34%	32%	35%	23%	
gdim	IdJ	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%		
gdim	IdJ	3%	2%	3%	4%	3%	3%	3%	3%	4%	3%	4%	4%	3%	4%	4%	4%	3%	6%	4%	4%	4%	2%	2%	2%	3%	4%	4%	2%	
gdim	InclJ	44%	51%	62%	78%	74%	62%	67%	57%	82%	40%	63%	105%	47%	83%	80%	88%	59%	81%	70%	57%	62%	61%	30%	65%	68%	48%	64%	55%	
gdim	InclJ	7%	1%	2%	20%	19%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
gdim	InverseVariance	23%	10%	15%	24%	20%	9%	11%	35%	18%	16%	18%	26%	6%	9%	16%	36%	54%	42%	16%	49%	53%	31%	57%	69%	62%	69%	42%	42%	
gdim	JointAverage	26%	27%	25%	34%	37%	30%	34%	35%	11%	14%	7%	12%	11%	12%	25%	15%	23%	22%	23%	23%	44%	62%	54%	44%	32%	43%	44%	50%	
gdim	JointEnergy	12%	9%	12%	24%	21%	17%	27%	20%	17%	16%	25%	21%	18%	18%	32%	35%	37%	29%	41%	41%	41%	51%	32%	45%	49%	49%	51%	37%	
gdim	JointEntropy	13%	18%	21%	34%	30%	33%	34%	16%	30%	16%	33%	50%	21%	38%	42%	35%	16%	37%	38%	18%	23%	26%	10%	14%	17%	15%	16%	10%	
gdim	MaximumProbability	63%	66%	65%	73%	94%	60%	71%	80%	100%	33%	105%	153%	88%	80%	82%	103%	99%	106%	110%	116%	103%	81%	84%	94%	102%	101%	103%	90%	
gdim	SumAverage	26%	27%	25%	34%	37%	30%	34%	35%	11%	14%	7%	12%	11%	12%	25%	15%	23%	22%	23%	23%	44%	62%	54%	44%	32%	43%	44%	50%	
gdim	SumEntropy	6%	4%	8%	4%	11%	9%	10%	21%	11%	12%	9%	15%	14%	8%	11%	19%	26%	26%	21%	34%	33%	40%	25%	37%	39%	42%	43%	29%	
gdim	SumSquares	45%	20%	41%	76%	53%	49%	26%	79%	94%	37%	39%	63%	36%	30%	84%	87%	76%	77%	30%	48%	73%	52%	39%	103%	188%	69%	76%	108%	
gdim	DependenceEntropy	25%	19%	27%	39%	31%	34%	29%	16%	34%	36%	33%	26%	34%	37%	31%	14%	30%	36%	30%	45%	44%	30%	22%	52%	42%	43%	45%	40%	
gdim	DependenceNonUniformityNormalized	25%	19%	27%	39%	31%	34%	29%	16%	34%	36%	33%	26%	34%	37%	31%	14%	30%	36%	30%	45%	44%	30%	22%	52%	42%	43%	45%	40%	
gdim	DependenceVariance	61%	42%	57%	65%	62%	50%	52%	69%	83%	62%	77%	94%	62%	69%	76%	78%	78%	59%	73%	65%	65%	57%	53%	45%	50%	50%	50%	42%	
gdim	GrayLevelNonUniformity	27%	18%	27%	38%	41%	32%	37%	50%	43%	34%	44%	36%	62%	48%	27%	43%	52%	63%	65%	70%	90%	73%	63%	60%	68%	73%	81%	79%	57%
gdim	GrayLevelVariance	45%	20%	41%	76%	53%	49%	26%	78%	93%	36%	39%	65%	34%	30%	83%	87%	76%	76%	28%	50%	73%	50%	60%	69%	78%	68%	76%	106%	
gdim	HighGrayLevelEmphasis	39%	40%	36%	45%	53%	43%	46%	51%	19%	26%	15%	25%	21%	23%	36%	17%	45%	41%	39%	44%	63%	83%	73%	52%	33%	48%	46%	61%	
gdim	LargeDependenceEmphasis	48%	48%	58%	77%	80%	53%	59%	63%	82%	66%	79%	100%	70%	83%	67%	93%	81%	94%	83%	85%	75%	71%	65%	76%	86%	78%	84%	70%	
gdim	LargeDependenceHighGrayLevelEmphasis	43%	37%	43%	92%	59%	88%	68%	48%	87%	65%	75%	132%	50%	67%	48%	90%	123%	105%	116%	137%	103%	70%	112%	96%	58%	53%	77%		
gdim	LargeDependenceLowGrayLevelEmphasis	114%	147%	160%	122%	123%	139%	187%	119%	158%	60%	70%	190%	71%	100%	113%	124%	187%	95%	86%	61%	189%	121%	119%	121%	123%	124%	124%	131%	
gdim	LowGrayLevelEmphasis	87%	105%	101%	107%	95%	116%	147%	106%	89%	46%	32%	46%	28%	45%	39%	112%	151%	40%	81%	50%	161%	114%	108%	109%	113%	116%	116%	116%	
gdim	SmallDependenceEmphasis	32%	27%	34%	59%	50%	58%	38%	45%	37%	36%	48%	43%	53%	46%	61%	56%	72%	54%	64%	69%	73%	48%	60%	80%	76%	58%			
gdim	SmallDependenceHighGrayLevelEmphasis	43%	42%	42%	70%	65%	79%	45%	56%	51%	44%	29%	43%	46%	62%	48%	64%	52%	68%	56%	60%	87%	92%	68%	73%	72%	75%	75%	76%	
gdim	SmallDependenceLowGrayLevelEmphasis	11%	58%	52%	73%	61%	82%	28%	68%	82%	28%	43%	48%	57%	51%	44%	37%	37%	35%	44%	50%	67%	62%	47%	57%	55%	47%	35%	41%	
gdim	GrayLevelNonUniformity	24%	8%	21%	33%	23%	22%	12%	48%	25%	12%	14%	23%	15%	25%	30%	37%	46%	35%	22%	30%	59%	43%	25%	43%	51%	42%	53%	41%	
gdim	GrayLevelVariance	26%	13%	23%	33%	22%	26%	28%	52%	12%	18%	24%	26%	34%	17%	42%	15%	15%	29%	40%	30%	41%	46%	47%	41%	21%	31%	26%	46%	
gdim	HighGrayLevelRunEmphasis	31%	37%	33%	43%	47%																								

(D) Heatmap of inter-system variability at 10 mGy by QCD

		ROL1	ROL2	ROL3	ROL4	ROL5	ROL6	ROL7	ROL8	ROL9	ROL10	ROL11	ROL12	ROL13	ROL14	ROL15	ROL16	ROL17	ROL18	ROL19	ROL20	ROL21	ROL22	ROL23	ROL24	ROL25	ROL26	ROL27	ROL28
firstorder	10Percentile	20%	11%	21%	47%	53%	76%	24%	5%	46%	17%	9%	12%	20%	29%	98%	55%	44%	8%	6%	21%	38%	1%	99%	99%	64%	66%	74%	39%
	90Percentile	78%	239%	122%	157%	58%	47%	41%	310%	153%	209%	79%	83%	54%	112%	79%	86%	109%	55%	30%	84%	118%	9%	106%	864%	64%	19%	194%	71%
firstorder	Energy	53%	15%	30%	74%	88%	97%	30%	14%	73%	19%	40%	32%	40%	76%	54%	27%	75%	46%	41%	66%	90%	3%	9%	5%	80%	72%	25%	70%
firstorder	Entropy	4%	5%	8%	15%	10%	7%	8%	15%	10%	13%	12%	10%	14%	7%	4%	20%	18%	23%	9%	21%	28%	41%	27%	40%	39%	35%	35%	33%
firstorder	InterquartileRange	29%	81%	34%	57%	67%	66%	43%	93%	91%	58%	23%	18%	32%	47%	95%	65%	93%	39%	14%	32%	61%	25%	33%	40%	16%	42%	32%	58%
firstorder	Kurtosis	23%	24%	43%	63%	38%	23%	39%	51%	18%	22%	29%	19%	34%	27%	45%	47%	39%	33%	7%	29%	41%	57%	62%	69%	11%	44%	45%	70%
firstorder	Maximum	14%	56%	22%	29%	42%	19%	184%	335%	168%	266%	58%	8%	98%	506%	69%	221%	437%	125%	70%	146%	734%	31%	192%	227%	11%	75%	121%	21%
firstorder	MeanAbsoluteDeviation	18%	79%	21%	47%	68%	78%	50%	91%	91%	59%	17%	9%	31%	44%	93%	59%	90%	31%	18%	46%	80%	78%	62%	62%	88%	81%	88%	49%
firstorder	Mean	44%	16%	26%	68%	56%	77%	8%	36%	43%	26%	27%	31%	23%	56%	117%	63%	34%	36%	26%	56%	103%	2%	102%	103%	48%	61%	72%	43%
firstorder	Median	54%	24%	42%	73%	61%	79%	6%	7%	49%	35%	32%	44%	19%	59%	213%	72%	49%	45%	31%	58%	102%	1%	102%	102%	50%	60%	78%	41%
firstorder	Minimum	1%	4%	6%	12%	28%	73%	49%	4%	14%	13%	19%	32%	11%	12%	66%	50%	36%	36%	16%	21%	25%	0%	93%	93%	45%	64%	61%	36%
firstorder	Range	3%	77%	8%	72%	74%	63%	74%	90%	58%	7%	29%	25%	26%	79%	5%	75%	54%	44%	65%	58%	48%	68%	69%	76%	69%	71%	49%	
firstorder	RobustMeanAbsoluteDeviation	25%	81%	31%	56%	74%	72%	44%	95%	91%	58%	22%	9%	36%	48%	95%	68%	93%	24%	14%	39%	70%	61%	36%	39%	89%	71%	25%	57%
firstorder	RootMeanSquare	29%	8%	15%	45%	53%	78%	15%	7%	42%	10%	21%	16%	11%	12%	66%	50%	36%	36%	16%	21%	25%	0%	93%	93%	45%	64%	61%	36%
firstorder	Skewness	254%	91%	27%	111%	212%	133%	59%	38401%	220%	653%	52%	37%	132%	33%	146%	181%	158%	149%	100%	183%	131%	105%	80%	114%	220%	198%	13822%	
firstorder	TotalEnergy	53%	15%	30%	74%	88%	97%	30%	14%	73%	19%	40%	32%	40%	76%	54%	27%	75%	46%	41%	66%	90%	3%	9%	5%	80%	72%	25%	70%
firstorder	Uniformity	28%	12%	24%	39%	25%	20%	23%	50%	20%	40%	26%	22%	44%	23%	22%	48%	47%	53%	30%	52%	54%	66%	54%	60%	61%	67%	62%	54%
firstorder	Variance	29%	97%	27%	64%	91%	97%	83%	99%	100%	88%	24%	20%	38%	68%	100%	81%	99%	62%	57%	79%	98%	96%	95%	95%	99%	98%	99%	87%
gdm	AutoCorrelation	26%	23%	4%	19%	51%	25%	22%	37%	12%	13%	11%	22%	16%	20%	15%	6%	19%	39%	42%	31%	58%	76%	76%	53%	26%	27%	31%	61%
gdm	ClusterProminence	59%	22%	44%	69%	70%	72%	27%	87%	48%	4%	17%	50%	21%	34%	92%	94%	80%	47%	20%	59%	92%	80%	74%	78%	95%	88%	93%	70%
gdm	ClusterSize	1162%	97%	20%	268%	136%	110%	45%	120%	144%	759%	109%	72%	187%	40%	9615%	127%	120%	116%	120%	86%	160%	108%	105%	91%	101%	114%	104%	150%
gdm	ClusterTendency	42%	14%	32%	35%	30%	39%	22%	75%	29%	32%	34%	32%	29%	24%	78%	81%	70%	33%	29%	45%	68%	49%	14%	24%	72%	56%	59%	38%
gdm	Contrast	24%	21%	37%	60%	39%	49%	37%	28%	47%	37%	60%	58%	40%	29%	52%	34%	34%	71%	52%	44%	32%	11%	37%	37%	23%	14%	39%	21%
gdm	Correlation	11%	8%	12%	14%	26%	30%	14%	19%	19%	12%	20%	53%	10%	23%	54%	37%	15%	43%	27%	11%	28%	35%	12%	16%	16%	7%	15%	12%
gdm	DifferenceAverage	8%	6%	14%	22%	15%	21%	10%	14%	16%	13%	20%	20%	15%	20%	15%	34%	29%	35%	22%	31%	25%	36%	14%	19%	48%	33%	42%	16%
gdm	DifferenceVariance	16%	6%	15%	24%	18%	22%	13%	18%	23%	18%	20%	19%	21%	26%	21%	31%	23%	24%	20%	30%	18%	20%	28%	24%	27%	17%	17%	
gdm	Id	20%	8%	21%	33%	25%	29%	18%	21%	30%	24%	28%	26%	27%	34%	28%	39%	28%	44%	29%	29%	44%	37%	22%	24%	34%	27%	31%	21%
gdm	Idmin	1%	0%	1%	1%	1%	1%	1%	0%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
gdm	Idn	2%	1%	4%	3%	3%	3%	3%	2%	3%	3%	3%	3%	2%	3%	3%	3%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
gdm	Imc2	34%	16%	14%	49%	62%	61%	23%	51%	56%	40%	52%	67%	42%	74%	77%	77%	54%	61%	53%	49%	63%	50%	15%	24%	59%	42%	55%	14%
gdm	Imc2	6%	4%	8%	13%	20%	18%	7%	9%	17%	10%	16%	26%	7%	25%	28%	22%	7%	13%	11%	7%	16%	10%	8%	10%	6%	4%	3%	7%
gdm	InverseVariance	14%	15%	13%	58%	8%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%
gdm	JointEnergy	21%	12%	3%	18%	37%	15%	8%	8%	6%	11%	8%	6%	11%	8%	10%	10%	12%	15%	17%	23%	19%	44%	60%	56%	28%	32%	37%	36%
gdm	JointEntropy	68%	21%	57%	79%	59%	65%	52%	85%	79%	75%	62%	55%	79%	70%	74%	89%	85%	90%	77%	85%	87%	93%	84%	90%	91%	92%	92%	79%
gdm	JointEntropy	9%	10%	12%	22%	12%	10%	24%	20%	16%	16%	14%	14%	19%	15%	14%	34%	31%	34%	19%	30%	35%	46%	30%	42%	54%	46%	48%	35%
gdm	MCD	12%	11%	10%	21%	31%	31%	17%	17%	24%	16%	26%	44%	16%	37%	44%	33%	14%	30%	26%	12%	22%	13%	8%	11%	15%	7%	11%	8%
gdm	MaximumProbability	60%	20%	52%	79%	65%	61%	64%	79%	77%	76%	63%	55%	75%	71%	78%	86%	81%	89%	78%	82%	83%	89%	77%	85%	84%	87%	87%	67%
gdm	SumAverage	21%	12%	3%	18%	37%	15%	11%	31%	8%	8%	6%	11%	8%	10%	10%	12%	15%	17%	23%	19%	44%	60%	56%	28%	32%	37%	36%	
gdm	SumEntropy	9%	10%	12%	22%	12%	10%	24%	20%	16%	16%	14%	14%	19%	15%	14%	34%	31%	34%	19%	30%	35%	46%	30%	42%	54%	46%	48%	35%
gdm	SumSquares	37%	11%	30%	25%	20%	30%	23%	71%	32%	30%	41%	25%	23%	26%	72%	74%	65%	42%	15%	40%	59%	40%	16%	25%	67%	49%	52%	37%
gdm	DependenceEntropy	3%	1%	3%	3%	3%	4%	2%	13%	2%	2%	1%	2%	2%	2%	1%	11%	16%	8%	5%	11%	11%	21%	13%	21%	30%	29%	30%	12%
gdm	DependenceNonUniformity	18%	7%	18%	34%	30%	22%	22%	9%	35%	34%	24%	24%	36%	40%	29%	8%	12%	30%	26%	16%	19%	13%	21%	11%	36%	39%	36%	19%
gdm	DependenceNonUniformityNormalized	18%	7%	18%	34%	30%	22%	22%	9%	35%	34%	24%	24%	36%	40%	29%	8%	12%	30%	26%	16%	19%	13%	21%	11%	36%	39%	36%	19%
gdm	DependenceVariance	55%	14%	30%	61%	52%	53%	50%	64%	67%	60%	41%	41%	59%	65%	73%	67%	48%	69%	54%	45%	46%	59%	52%	40%	40%	38%	43%	
gdm	GrayLevelNonUniformity	28%	12%	24%	39%	25%	20%	23%	50%	30%	40%	26%	22%	44%	23%	22%	48%	47%	53%	30%	52%	54%	66%	54%	60%	61%	67%	62%	54%
gdm	GrayLevelVariance	57%	10%	29%	25%	20%	31%	23%	71%	31%	30%	40%	25%	23%	26%	72%	74%	65%	41%	17%	40%	60%	38%	14%	21%	68%	49%	53%	32%
gdm	HighGrayLevelEmphasis	26%	23%	4%	20%	50%	44%	20%	37%	11%	14%	11%	20%	16%	20%	14%	6%	18%	35%	40%	31%	56%	71%	71%	52%	25%	26%	31%	59%
gdm	LargeDependenceEmphasis	47%	14%	33%	63%	53%	58%	40%	62%	70%	58%	48%	45%	62%	71%	66%	79%	69%	78%	63%	70%	63%	78%	61%	66%	75%	69%	74%	57%
gdm	LargeDependenceHighGrayLevelEmphasis	21%	30%	32%	70%	40%	56%	56%	41%	69%	54%	51%	57%	39%	56%	40%	75%	74%	96%	85%	83%	31%	72%	64%	44%	51%	36%	45%	74%
gdm	LargeDependenceLowGrayLevelEmphasis	98%	46%	38%	96%	94%	78%	20%	99%	68%	62%	32%	22%	69%	80%	99%	100%	69%	33%	25%	42%	63%	100%	99%	99%	99%	99%	99%	99%
gdm	LowGrayLevelEmphasis	84%	9%	38%	77%	77%	33%	34%	92%	33%	18%	25%	30%	21%	27%	87%	93%	19%	18%	54%	41%	44%	95%	91%	92%	92%	94%	95%	95%
gdm	SmallDependenceEmphasis	24%	12%	28%	52%	42%	52%	23%	33%	35%	32%	37%	36%	43%	53%	40%	68%	59%	69%	51%	60%	55%	66%	44%	49%	73%	65%	69%	53%
gdm	SmallDependenceHighGrayLevelEmphasis	26%	20%	21%	75%	65%	66%	12%	26%	33%	38%	28%	16%	37%	69%	26%	70%	55%	56%	29%	49%	67%	75%	62%	63%	71%	56%	67%	68%
gdm	SmallDependenceLowGrayLevelEmphasis	9%	34%	42%	24%	30%	42%	57%	23%	32%	36%	50%	42%	37%	24%	12%	24%	34%	70%	67%	60%	42%	53%	54%	30%	18%	35%	33%	42%
gdm	GrayLevelNonUniformity	21%	3%	18%	19%	8%	12%	9%	35%	20%	7%	7%	11%	12%	22%	22%	39%	50%	17%	18%	28%	33%	38%	17%	16%	52%	41%	56%	29%
gdm	GrayLevelNonUniformityNormalized	6%	11%	19%	31%	21%	19%	17%	13%	10%	18%	23%	20%	23%	13%	7%	14%	8%	20%	9%	25%	31%	24%	41%	37%	17%	27%	17%	22%
gdm	GrayLevelVariance	16%	16%	32%	23%	29%	17%	23%	54%	22%	18%	34%	23%	17%	14%	55%	64%	59%	31%	16%									

(E) Heatmap of inter-system variability at 20 mGy by CV

	ROL1	ROL2	ROL3	ROL4	ROL5	ROL6	ROL7	ROL8	ROL9	ROL10	ROL11	ROL12	ROL13	ROL14	ROL15	ROL16	ROL17	ROL18	ROL19	ROL20	ROL21	ROL22	ROL23	ROL24	ROL25	ROL26	ROL27	ROL28	
firstorder	10Percentile	1.99	46%	45%	51%	56%	69%	66%	23%	50%	46%	16%	51%	48%	40%	91%	82%	51%	18%	15%	23%	61%	66%	177%	215%	55%	258%	228%	45%
firstorder	90Percentile	429%	243%	428%	199%	124%	143%	139%	340%	190%	173%	188%	116%	56%	124%	553%	672%	14324%	675%	44%	988%	1534%	86%	202%	1233%	970%	1184%	283%	226%
firstorder	Entropy	72%	13%	14%	14%	10%	11%	16%	51%	11%	13%	5%	51%	65%	88%	84%	8%	76%	134%	3%	8%	78%	43%	48%	51%	73%	77%	65%	
firstorder	Entropy	8%	6%	10%	17%	14%	13%	15%	21%	12%	14%	17%	16%	10%	15%	21%	26%	27%	24%	35%	33%	46%	32%	40%	37%	41%	42%	31%	
firstorder	InterquartileRange	56%	73%	69%	80%	81%	135%	60%	99%	119%	91%	29%	27%	62%	72%	106%	74%	120%	165%	80%	54%	172%	125%	39%	184%	191%	169%	163%	192%
firstorder	Kurtosis	68%	35%	44%	86%	54%	66%	66%	188%	43%	24%	33%	68%	33%	68%	48%	41%	48%	52%	37%	131%	160%	18%	115%	22%	6%	51%	9%	
firstorder	Maximum	3969%	1009%	675%	1233%	269%	219%	258%	100%	529%	1043%	115%	168%	152%	572%	212%	639%	831%	160%	93%	3960%	342%	125%	364%	401%	4295%	516%	177%	368%
firstorder	MeanAbsoluteDeviation	50%	72%	59%	73%	76%	105%	60%	95%	102%	72%	24%	63%	53%	67%	100%	67%	116%	141%	57%	115%	122%	68%	17%	144%	110%	108%	172%	
firstorder	Mean	60%	94%	109%	87%	74%	81%	94%	51%	77%	74%	43%	41%	47%	63%	198%	131%	205%	405%	30%	324%	179%	75%	190%	303%	67%	349%	314%	54%
firstorder	Median	60%	94%	109%	87%	74%	81%	94%	51%	77%	74%	43%	41%	47%	63%	198%	131%	205%	405%	30%	324%	179%	75%	190%	303%	67%	349%	314%	54%
firstorder	Minimum	2%	33%	8%	21%	36%	62%	43%	9%	26%	26%	19%	36%	43%	34%	63%	43%	38%	37%	24%	19%	50%	48%	166%	200%	51%	219%	197%	39%
firstorder	Range	42%	69%	44%	45%	68%	83%	69%	71%	64%	56%	12%	38%	54%	51%	70%	51%	100%	96%	53%	95%	83%	53%	62%	130%	118%	84%	106%	130%
firstorder	RobustMeanAbsoluteDeviation	54%	78%	67%	89%	77%	124%	61%	100%	120%	81%	26%	46%	58%	72%	106%	77%	118%	154%	77%	80%	144%	99%	39%	188%	154%	133%	122%	190%
firstorder	RootMeanSquared	37%	67%	70%	66%	66%	77%	87%	34%	63%	59%	28%	31%	47%	51%	59%	51%	46%	68%	26%	50%	61%	40%	47%	57%	50%	53%	46%	
firstorder	Skewness	602%	689%	381%	3059%	492%	148%	1611%	298%	319%	673%	154%	91%	170%	139%	391%	382%	559%	155%	141%	118%	250%	176%	113%	109%	143%	437%	259%	637%
firstorder	TotalEnergy	72%	13%	14%	14%	10%	11%	16%	51%	11%	13%	5%	51%	65%	88%	84%	86%	76%	134%	53%	94%	78%	43%	48%	51%	73%	77%	65%	
firstorder	Uniformity	30%	22%	28%	40%	41%	38%	42%	49%	43%	46%	36%	59%	47%	29%	48%	55%	65%	67%	77%	91%	74%	63%	62%	71%	71%	62%	79%	57%
firstorder	Variance	58%	85%	84%	96%	103%	129%	98%	114%	141%	113%	42%	136%	78%	101%	116%	83%	142%	191%	103%	186%	159%	83%	113%	199%	177%	132%	149%	199%
gdm	Automation	41%	42%	37%	47%	54%	45%	49%	51%	18%	27%	14%	26%	24%	22%	38%	16%	47%	44%	41%	46%	65%	84%	77%	54%	30%	48%	47%	65%
gdm	ClusterHomogeneity	57%	48%	63%	81%	107%	66%	120%	100%	115%	53%	50%	161%	38%	48%	113%	114%	105%	127%	41%	142%	113%	106%	64%	152%	117%	106%	112%	136%
gdm	ClusterShade	494%	907%	586%	471%	162%	98%	381%	160%	204%	726%	150%	101%	234%	87%	227%	154%	470%	158%	142%	185%	719%	139%	135%	155%	123%	138%	128%	181%
gdm	ClusterTendency	47%	21%	47%	85%	64%	56%	29%	84%	108%	37%	35%	86%	37%	33%	94%	96%	80%	90%	33%	56%	77%	60%	31%	110%	96%	74%	82%	112%
gdm	Contrast	27%	47%	46%	66%	51%	58%	47%	61%	54%	57%	54%	59%	40%	40%	63%	40%	47%	81%	57%	55%	64%	54%	42%	27%	64%	31%		
gdm	Correlation	13%	16%	19%	39%	34%	35%	38%	28%	35%	16%	31%	65%	15%	31%	53%	41%	18%	49%	47%	19%	26%	35%	14%	20%	22%	21%	24%	15%
gdm	DifferenceAverage	30%	23%	33%	54%	44%	47%	35%	45%	44%	39%	37%	46%	35%	43%	50%	50%	66%	51%	58%	57%	54%	27%	41%	54%	65%	63%	32%	
gdm	DifferenceVariance	15%	13%	17%	28%	24%	23%	20%	24%	22%	16%	19%	27%	17%	24%	20%	33%	35%	38%	30%	41%	35%	40%	19%	35%	45%	42%	47%	25%
gdm	DifferenceSkewness	19%	19%	34%	42%	31%	33%	31%	41%	33%	38%	43%	47%	20%	20%	44%	14%	26%	48%	37%	32%	39%	52%	82%	30%	50%	37%	78%	
gdm	DifferenceId	18%	17%	21%	27%	25%	22%	22%	20%	28%	21%	24%	31%	22%	29%	23%	34%	26%	37%	30%	28%	24%	29%	20%	28%	26%	29%	19%	
gdm	Id	25%	24%	29%	36%	32%	29%	30%	24%	36%	27%	33%	42%	29%	39%	30%	43%	31%	47%	38%	34%	29%	35%	44%	28%	33%	31%	35%	22%
gdm	Idm	3%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	
gdm	Idm	3%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	
gdm	Imcl	36%	60%	75%	78%	76%	62%	82%	54%	84%	39%	61%	106%	47%	85%	82%	89%	61%	84%	72%	59%	62%	65%	31%	63%	69%	48%	65%	54%
gdm	Imc2	7%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	
gdm	InverseVariance	21%	8%	15%	23%	19%	9%	11%	35%	18%	18%	19%	25%	7%	10%	17%	39%	56%	40%	19%	53%	54%	59%	33%	51%	69%	64%	71%	41%
gdm	JointAverage	27%	28%	26%	35%	37%	32%	36%	35%	10%	14%	7%	12%	13%	12%	26%	15%	23%	21%	23%	24%	44%	61%	55%	45%	30%	43%	44%	51%
gdm	JointEntropy	65%	78%	75%	77%	99%	72%	101%	85%	105%	97%	85%	144%	91%	88%	108%	116%	113%	120%	144%	135%	122%	89%	94%	105%	111%	115%	115%	102%
gdm	JointEntropy	13%	11%	14%	23%	21%	20%	19%	27%	17%	16%	25%	21%	19%	19%	30%	34%	37%	37%	31%	43%	41%	54%	34%	46%	48%	49%	52%	36%
gdm	MCC	13%	20%	24%	35%	32%	34%	37%	16%	33%	17%	33%	51%	19%	39%	43%	36%	16%	38%	38%	19%	23%	28%	10%	14%	18%	14%	16%	9%
gdm	MaximumProbability	60%	81%	77%	72%	92%	68%	84%	77%	101%	94%	105%	130%	90%	83%	83%	103%	106%	110%	114%	114%	104%	81%	87%	96%	100%	103%	104%	88%
gdm	SumAverage	13%	11%	14%	23%	21%	20%	19%	27%	17%	16%	25%	21%	19%	19%	30%	34%	37%	37%	31%	43%	41%	54%	34%	46%	48%	49%	52%	36%
gdm	SumEntropy	7%	5%	9%	14%	11%	10%	11%	11%	12%	9%	14%	14%	9%	12%	21%	28%	26%	23%	37%	33%	42%	27%	39%	39%	42%	44%	30%	
gdm	SumSquares	42%	19%	45%	71%	51%	45%	26%	78%	92%	39%	39%	62%	36%	32%	84%	87%	75%	73%	30%	49%	73%	54%	31%	102%	91%	70%	76%	106%
gdm	DependenceEntropy	36%	36%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
gdm	DependenceNonUniformity	28%	22%	30%	40%	34%	38%	29%	17%	35%	36%	33%	28%	34%	38%	31%	15%	36%	33%	36%	48%	43%	32%	21%	48%	43%	45%	45%	41%
gdm	DependenceNonUniformityNormalized	28%	22%	30%	40%	34%	38%	29%	17%	35%	36%	33%	28%	34%	38%	31%	15%	36%	33%	36%	48%	43%	32%	21%	48%	43%	45%	45%	41%
gdm	DependenceVariance	58%	57%	69%	64%	64%	55%	55%	69%	84%	78%	96%	81%	71%	79%	79%	78%	59%	77%	70%	55%	51%	64%	57%	53%	44%	48%	49%	53%
gdm	GrayLevelNonUniformity	83%	111%	111%	123%	97%	130%	165%	108%	92%	46%	33%	87%	34%	43%	92%	112%	149%	50%	86%	50%	161%	113%	107%	110%	113%	115%	115%	110%
gdm	GrayLevelVariance	43%	18%	44%	71%	51%	45%	25%	77%	93%	38%	39%	63%	34%	32%	83%	87%	75%	73%	29%	51%	73%	52%	30%	101%	90%	69%	75%	104%
gdm	HighGrayLevelEmphasis	40%	41%	36%	46%	53%	44%	47%	51%	17%	17%	12%	24%	23%	23%	37%	16%	46%	40%	38%	45%	63%	80%	72%	51%	29%	46%	45%	63%
gdm	LargeDependenceEmphasis	48%	64%	71%	74%	78%	57%	70%	62%	63%	67%	81%	108%	71%	85%	68%	94%	83%	98%	86%	85%	76%	71%	65%	76%	85%	79%	86%	69%
gdm	LargeDependenceHighGrayLevelEmphasis	46%	38%	39%	89%	57%	91%	69%	49%	67%	65%	76%	131%	49%	70%	48%	90%	127%	114%	108%	115%	138%	124%	108%	98%	46%	53%	74%	
gdm	LargeDependenceLowGrayLevelEmphasis	111%	160%	175%	134%	120%	161%	199%	119%	162%	63%	73%	195%	74%	101%	112%	123%	186%	96%	93%	61%	189%	120%	119%	120%	123%	124%	123%	128%
gdm	LowGrayLevelEmphasis	83%	111%	111%	123%	97%	130%	165%	108%	92%	46%	33%	87%	34%	43%	92%	112%	149%	50%	86%	50%	161%	113%	107%	110%	113%	115%	115%	110%
gdm	SmallDependenceEmphasis	34%	30%	36%	62%	53%	41%	41%	47%	48%	37%	44%	48%	43%	53%	45%	62%	76%	69%	54%	65%	68%	77%	51%	61%	66%	78%	74%	44%
gdm	SmallDependenceHighGrayLevelEmphasis	45%	43%	43%	72%	65%	82%	47%	57%	50%	46%	28%	42%	47%	63%	48%	64%	54%	63%	58%	62%	86%	95%	69%	73%	70%	71%	74%	75%
gdm	SmallDependenceLowGrayLevelEmphasis	14%	53%	49%	73%	53%	78%	81%	31%	41%	48%	57%	50%	46%	37%	42%	31%												

(F) Heatmap of inter-system variability at 20 mGy by QCD

	ROL1	ROL2	ROL3	ROL4	ROL5	ROL6	ROL7	ROL8	ROL9	ROL10	ROL11	ROL12	ROL13	ROL14	ROL15	ROL16	ROL17	ROL18	ROL19	ROL20	ROL21	ROL22	ROL23	ROL24	ROL25	ROL26	ROL27	ROL28	
firstorder	10thPercentile	18%	10%	26%	47%	48%	75%	24%	5%	46%	22%	11%	12%	20%	29%	96%	55%	43%	9%	8%	20%	37%	1%	99%	99%	48%	66%	73%	39%
firstorder	90thPercentile	27%	246%	120%	157%	60%	52%	40%	319%	155%	58%	149%	88%	53%	115%	80%	87%	107%	56%	28%	86%	118%	9%	106%	831%	62%	21%	196%	71%
firstorder	Energy	52%	16%	16%	72%	83%	97%	30%	14%	73%	16%	40%	33%	40%	27%	15%	77%	74%	46%	42%	66%	80%	3%	2%	60%	73%	75%	70%	
firstorder	Entropy	4%	4%	8%	16%	11%	7%	8%	14%	10%	14%	11%	11%	15%	8%	3%	22%	19%	26%	11%	22%	28%	44%	30%	41%	38%	36%	38%	32%
firstorder	InterquartileRange	30%	82%	34%	62%	67%	67%	41%	92%	92%	58%	27%	20%	32%	47%	95%	66%	93%	45%	10%	36%	61%	19%	32%	40%	25%	45%	32%	61%
firstorder	Kurtosis	2%	22%	43%	65%	43%	24%	39%	53%	42%	23%	30%	21%	36%	31%	46%	38%	27%	15%	32%	40%	58%	64%	68%	12%	44%	46%	73%	
firstorder	Maximum	24%	540%	20%	119%	571%	578%	390%	11010%	2819%	6819%	60%	114%	95%	796%	69%	236%	1841%	144%	74%	150%	628%	32%	190%	224%	108%	82%	121%	61%
firstorder	MeanAbsoluteDeviation	19%	79%	21%	52%	74%	79%	48%	90%	92%	60%	20%	14%	34%	44%	92%	59%	90%	33%	12%	46%	79%	61%	64%	88%	88%	52%		
firstorder	Median	16%	28%	68%	56%	77%	8%	38%	43%	26%	27%	32%	21%	56%	311%	63%	33%	21%	26%	76%	102%	102%	49%	60%	73%				
firstorder	Minimum	5%	24%	40%	73%	61%	79%	6%	8%	49%	35%	33%	43%	19%	59%	226%	72%	49%	45%	32%	58%	102%	1%	102%	102%	50%	69%	78%	41%
firstorder	Range	1%	4%	3%	7%	22%	72%	47%	4%	14%	16%	16%	30%	11%	12%	63%	44%	36%	35%	16%	21%	25%	0%	93%	92%	45%	64%	60%	36%
firstorder	RobustMeanAbsoluteDeviation	3%	78%	9%	24%	74%	73%	59%	72%	91%	59%	11%	27%	25%	29%	79%	7%	76%	54%	41%	65%	58%	48%	70%	68%	71%	71%	50%	
firstorder	RootMeanSquared	28%	8%	19%	42%	53%	77%	15%	7%	42%	8%	21%	17%	21%	47%	29%	47%	45%	24%	22%	38%	63%	1%	1%	3%	50%	43%	45%	41%
firstorder	Skewness	260%	72%	25%	112%	186%	141%	59%	2715%	112%	809%	50%	31%	133%	33%	310%	256%	132%	152%	151%	101%	182%	130%	105%	88%	124%	219%	171%	1610%
firstorder	TotalEnergy	52%	16%	37%	72%	82%	97%	30%	14%	73%	16%	40%	33%	40%	27%	15%	77%	74%	46%	42%	66%	80%	3%	2%	60%	73%	75%	70%	
firstorder	Uniformity	27%	10%	27%	41%	27%	21%	22%	49%	30%	41%	26%	24%	44%	24%	20%	49%	48%	56%	36%	55%	53%	68%	58%	66%	59%	67%	66%	54%
firstorder	Variance	30%	97%	26%	71%	94%	97%	81%	99%	100%	88%	31%	26%	47%	69%	100%	82%	99%	63%	48%	79%	98%	97%	95%	95%	99%	98%	99%	89%
gdm	AutoCorrelation	26%	24%	48%	22%	45%	25%	22%	31%	10%	16%	11%	20%	19%	21%	23%	48%	20%	39%	43%	32%	56%	78%	76%	56%	24%	27%	27%	66%
gdm	ClusterProminence	5%	18%	55%	72%	72%	68%	10%	88%	40%	45%	45%	48%	25%	35%	92%	94%	86%	39%	21%	62%	9%	90%	75%	80%	95%	89%	93%	74%
gdm	ClusterShade	90%	23%	263%	130%	113%	53%	118%	190%	536%	100%	71%	169%	5%	1189%	128%	109%	112%	133%	86%	165%	109%	106%	93%	101%	113%	104%	146%	
gdm	ClusterTendency	43%	15%	33%	38%	38%	36%	23%	77%	23%	34%	31%	29%	22%	24%	81%	81%	69%	30%	28%	48%	68%	59%	15%	23%	74%	57%	58%	52%
gdm	Contrast	26%	21%	41%	64%	39%	50%	38%	30%	52%	37%	59%	60%	38%	36%	49%	37%	35%	70%	56%	44%	33%	14%	43%	35%	24%	14%	27%	21%
gdm	Correlation	8%	8%	12%	16%	27%	35%	22%	19%	20%	14%	20%	51%	9%	24%	53%	39%	14%	44%	34%	13%	27%	38%	7%	16%	20%	6%	16%	13%
gdm	DifferenceAverage	22%	12%	31%	46%	34%	42%	24%	32%	42%	31%	38%	38%	35%	41%	55%	54%	50%	64%	50%	55%	43%	42%	19%	34%	58%	41%	35%	19%
gdm	DiffereceEntropy	7%	6%	15%	26%	19%	22%	11%	15%	18%	13%	19%	21%	15%	22%	15%	34%	29%	35%	24%	32%	27%	39%	17%	23%	48%	31%	43%	14%
gdm	DifferenceVariance	8%	14%	29%	36%	32%	27%	24%	12%	30%	27%	41%	50%	14%	15%	33%	8%	16%	41%	60%	13%	24%	43%	64%	27%	23%	47%	28%	36%
gdm	Id	17%	6%	15%	28%	23%	14%	19%	26%	19%	19%	19%	21%	21%	32%	24%	35%	27%	25%	21%	31%	20%	22%	28%	22%	27%	15%		
gdm	Idm	22%	8%	22%	37%	29%	30%	19%	23%	34%	24%	26%	27%	27%	35%	27%	40%	28%	45%	34%	30%	25%	38%	24%	26%	32%	25%	31%	18%
gdm	Intr	1%	1%	3%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
gdm	Idm	2%	1%	3%	3%	4%	3%	3%	2%	2%	4%	3%	3%	4%	3%	4%	3%	4%	3%	2%	4%	2%	2%	3%	2%	3%	2%	3%	1%
gdm	Incl	36%	15%	14%	56%	66%	66%	31%	50%	58%	38%	53%	60%	41%	75%	78%	78%	53%	60%	56%	53%	62%	61%	29%	35%	62%	38%	56%	15%
gdm	Incl2	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%	17%	11%
gdm	InverseVariance	3%	6%	15%	16%	12%	7%	10%	34%	13%	13%	6%	4%	7%	11%	40%	53%	17%	7%	40%	48%	57%	33%	60%	75%	64%	74%	17%	
gdm	JointAverage	21%	12%	3%	19%	36%	15%	11%	29%	7%	9%	6%	10%	10%	11%	10%	14%	12%	18%	23%	19%	41%	62%	57%	30%	20%	31%	35%	40%
gdm	JointEnergy	69%	18%	57%	82%	69%	66%	49%	88%	46%	76%	61%	58%	79%	74%	73%	70%	92%	81%	87%	87%	94%	86%	94%	90%	92%	93%	79%	
gdm	JointEntropy	10%	3%	12%	25%	17%	10%	9%	24%	17%	15%	15%	19%	17%	13%	36%	33%	37%	21%	32%	34%	49%	35%	40%	33%	45%	50%	47%	
gdm	MCC	13%	11%	11%	24%	31%	35%	22%	17%	26%	15%	27%	42%	16%	38%	46%	34%	13%	29%	27%	15%	21%	19%	4%	11%	15%	5%	10%	5%
gdm	MaximumProbability	59%	17%	51%	78%	71%	70%	65%	78%	78%	75%	61%	58%	76%	71%	78%	87%	81%	89%	82%	85%	82%	89%	79%	87%	82%	87%	88%	70%
gdm	SumAverage	12%	1%	7%	36%	7%	7%	1%	2%	7%	9%	6%	10%	11%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
gdm	SumEntropy	3%	6%	12%	9%	5%	6%	17%	9%	12%	8%	7%	13%	7%	4%	21%	21%	25%	10%	23%	24%	37%	26%	42%	41%	36%	40%	28%	
gdm	SumSquares	37%	13%	29%	28%	29%	29%	23%	73%	23%	33%	37%	22%	22%	24%	73%	76%	64%	37%	23%	40%	60%	55%	16%	23%	70%	51%	48%	49%
gdm	DependenceEntropy	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
gdm	DependenceNonUniformity	19%	7%	18%	37%	34%	36%	23%	11%	37%	33%	26%	27%	36%	40%	28%	10%	10%	27%	32%	17%	19%	17%	20%	15%	38%	32%	20%	
gdm	DependenceNonUniformityNormalized	7%	1%	18%	37%	34%	36%	23%	11%	37%	33%	26%	27%	36%	40%	28%	10%	10%	27%	32%	17%	19%	17%	20%	15%	38%	32%	20%	
gdm	DependenceVariance	53%	10%	29%	62%	59%	58%	45%	70%	63%	40%	43%	59%	69%	74%	70%	48%	70%	61%	43%	50%	67%	56%	41%	40%	32%	37%	36%	
gdm	GrayLevelEntropy	27%	10%	27%	41%	27%	21%	22%	49%	30%	41%	32%	32%	35%	42%	38%	60%	68%	53%	65%	61%	67%	47%	52%	73%	62%	71%	47%	
gdm	GrayLevelVariance	37%	12%	27%	28%	28%	30%	23%	73%	22%	32%	37%	22%	21%	23%	72%	75%	64%	35%	24%	41%	61%	34%	14%	20%	71%	51%	45%	
gdm	HighGrayLevelEmphasis	26%	24%	48%	48%	23%	48%	24%	20%	30%	10%	17%	9%	18%	19%	21%	21%	4%	20%	35%	39%	32%	56%	73%	71%	56%	24%	26%	64%
gdm	LargeDependenceEmphasis	49%	13%	32%	65%	62%	62%	42%	63%	74%	59%	44%	45%	62%	73%	66%	80%	70%	80%	70%	72%	66%	60%	63%	69%	74%	67%	74%	50%
gdm	LargeDependenceHighGrayLevelEmphasis	28%	36%	28%	67%	49%	56%	56%	40%	69%	52%	48%	55%	38%	61%	40%	75%	74%	91%	87%	84%	32%	70%	61%	45%	49%	32%	44%	74%
gdm	LargeDependenceLowGrayLevelEmphasis	88%	46%	39%	97%	95%	79%	20%	99%	71%	61%	30%	27%	71%	81%	99%	100%	70%	36%	32%	45%	60%	99%	98%	99%	99%	99%	99%	99%
gdm	LowGrayLevelEmphasis	28%	11%	37%	74%	77%	35%	33%	94%	36%	23%	24%	25%	23%	87%	98%	15%	26%	57%	52%	41%	95%	91%	95%	93%	94%	94%	96%	
gdm	SmallDependenceEmphasis	4%	13%	27%	60%	49%	55%	23%	34%	41%	32%	32%	35%	42%	38%	60%	68%	53%	65%	61%	67%	47%	52%	73%	62%	71%	47%		
gdm	SmallDependenceHighGrayLevelEmphasis	27%	23%	22%	76%	67%	69%	9%	20%	35%	39%	24%	18%	42%	71%	25%	69%	59%	54%	36%	52%	70%	73%	62%	66%	72%	60%	69%	71%
gdm	SmallDependenceLowGrayLevelEmphasis	9%	35%	39%	28%	31%	51%	56%	25%	26%	42%	50%	52%	38%	20%	16%	19%	30%	68%	66%	64%	41%	47%	47%	26%	24%	30%	27%	40%
gdm	GrayLevelNonUniformity	20%	6%	23%	10%	13%	14%	9%	37%	22%	8%	7%	10%	11%	22%	22%	37%	52%	21%	16%	35%	44%	14%	24%	54%	43%	56%	35%	
gdm	GrayLevelNonUniformityNormalized	5%	10%	16%	33%	23%	18%	17%	15%	10%	18%	21%	22%	23%	15%	8%	16%	8%	20%	12%	23%	33%	18%	43%	33%	15%	27%	21%	27%
gdm	GrayLevelVariance	17%	18%	37%	26%	37%	19%	23%	56%	17%	19%	32%	20%	16															