

Secondary precipitation of Fe-Ti oxides as a source for strongly changing magnetic properties in ancient volcanic rocks (Cadí Basin, Pyrenees)

Supplementary material

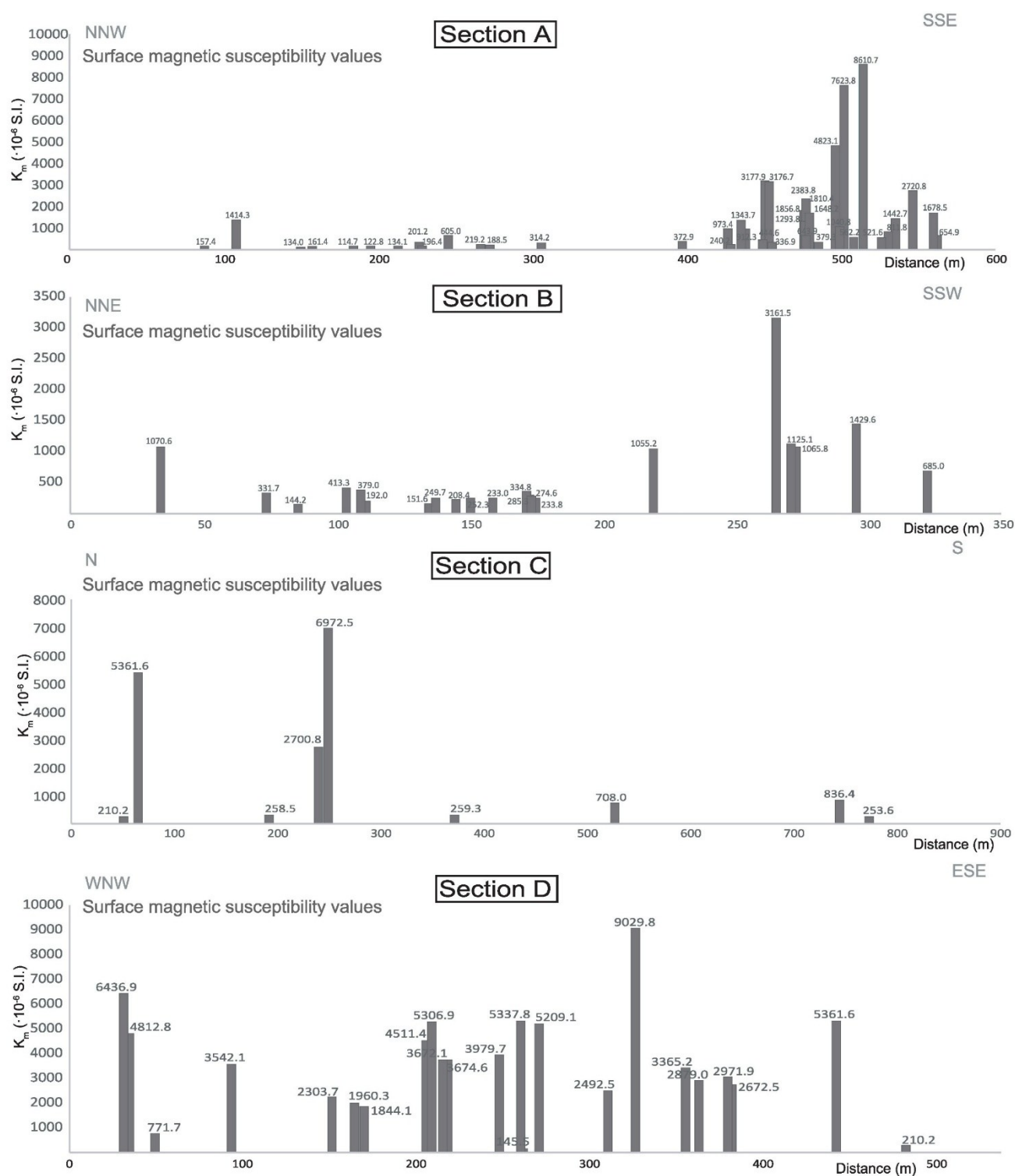
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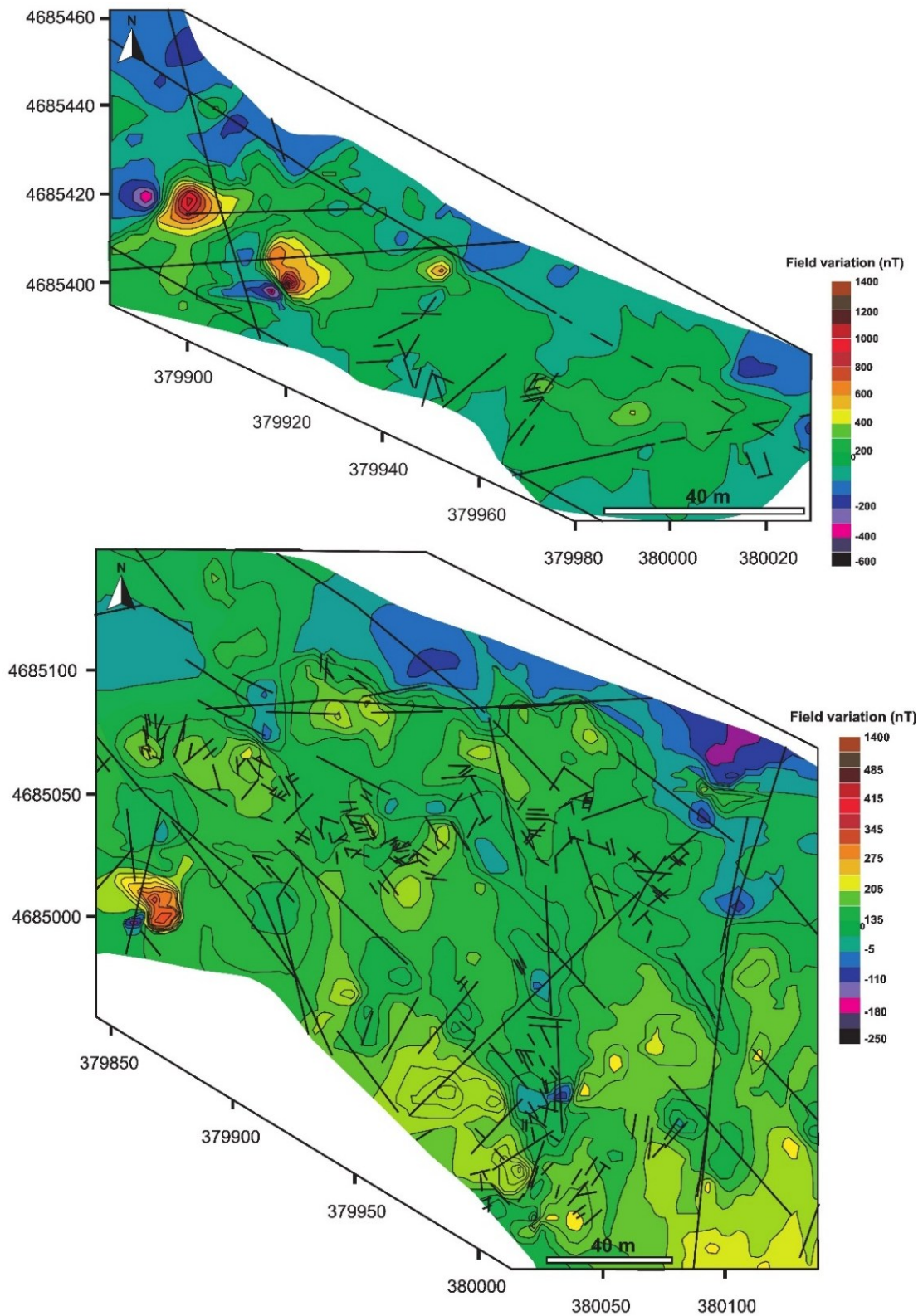
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Supplementary material 1: surficial magnetic susceptibility values measured by means of a KT20-Terraplus hand-held susceptometer and projected along sections A, B, C and D. See Fig.2 to see the sections location.

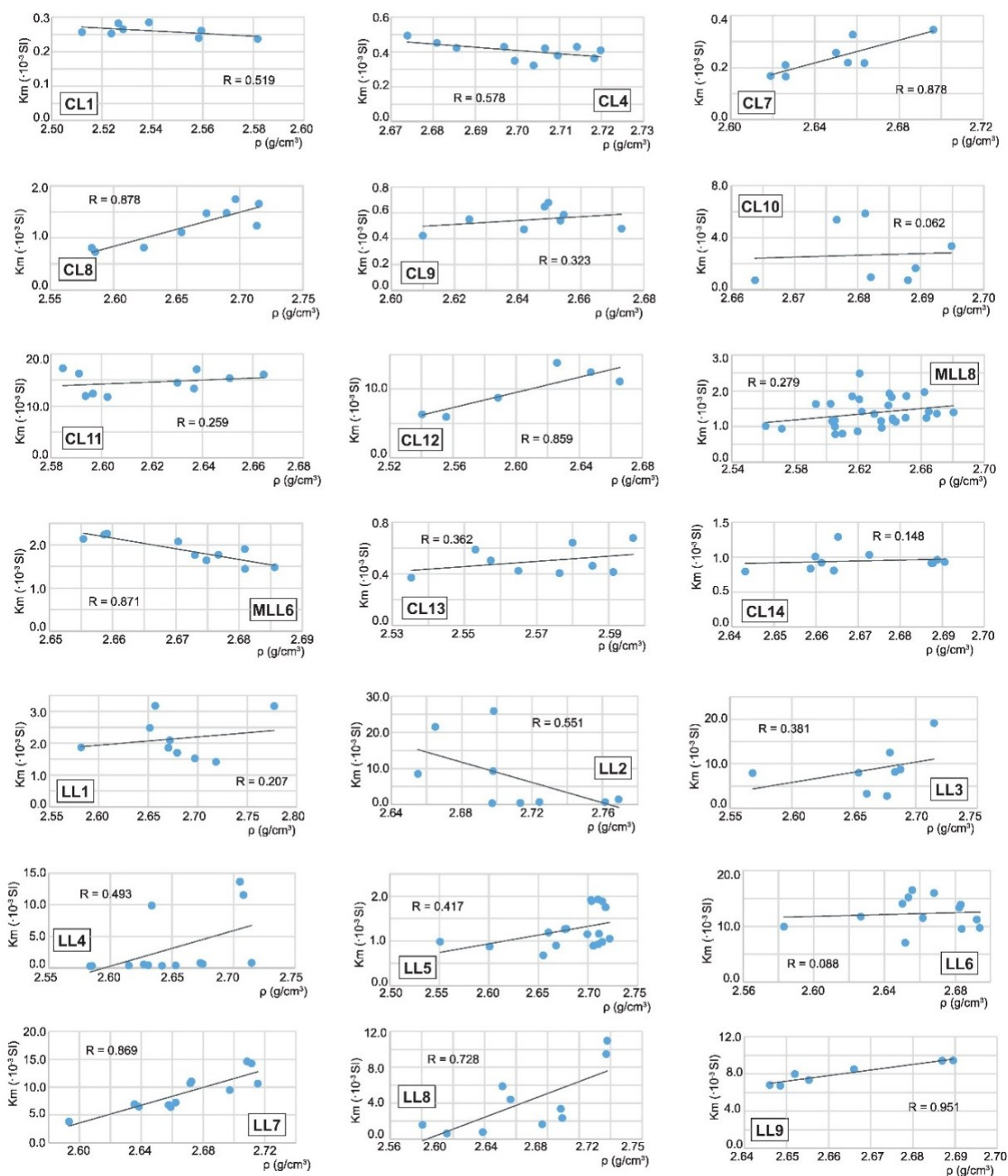


Supplementary material 2: Areal magnetic survey performed in two small areas ($\approx 24000 \text{ m}^2$ and 5000 m^2) to recognize the scale of the variations of the magnetic field. Magnetic anomalies are not arranged along the major faults and/or fractures (black lines) and do not show a clear pattern of distribution. Magnetic field in nT.

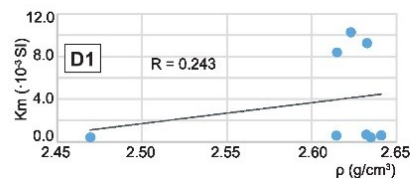
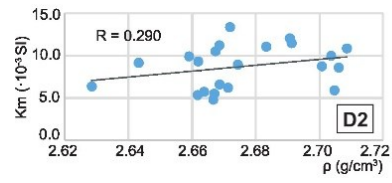
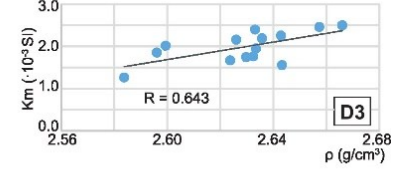
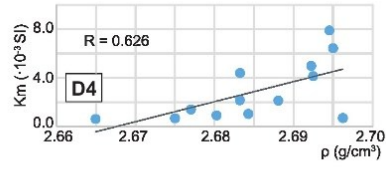
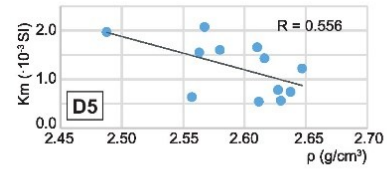
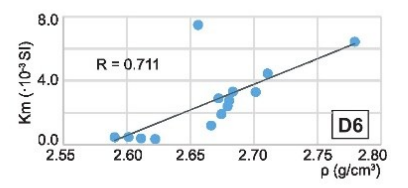
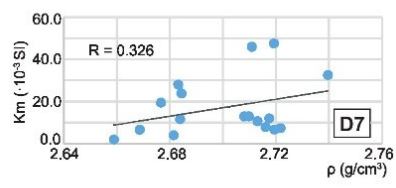
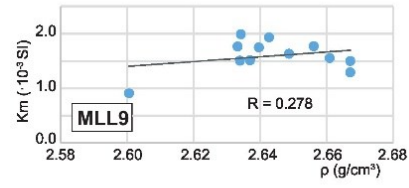


Supplementary material 3: density values vs. mean magnetic susceptibility values (K_m) at specimen level in each studied site. Sites CL1, CL4, CL7, CL8, CL12, ML6, LL2, LL7, LL8, LL9, D6, D5, D4 and D3 present a high positive and/or high correlation between the two parameters (see also Fig. 2 and Fig. 4 to locate the sites and their distribution). It has not been possible to relate this correlation between density and K_m with the iron and/or titanium oxides content, with the orientation of the magnetic susceptibility ellipsoid parameters or the fault and/or fracture pattern distribution.

Density- K_m diagrams at site level

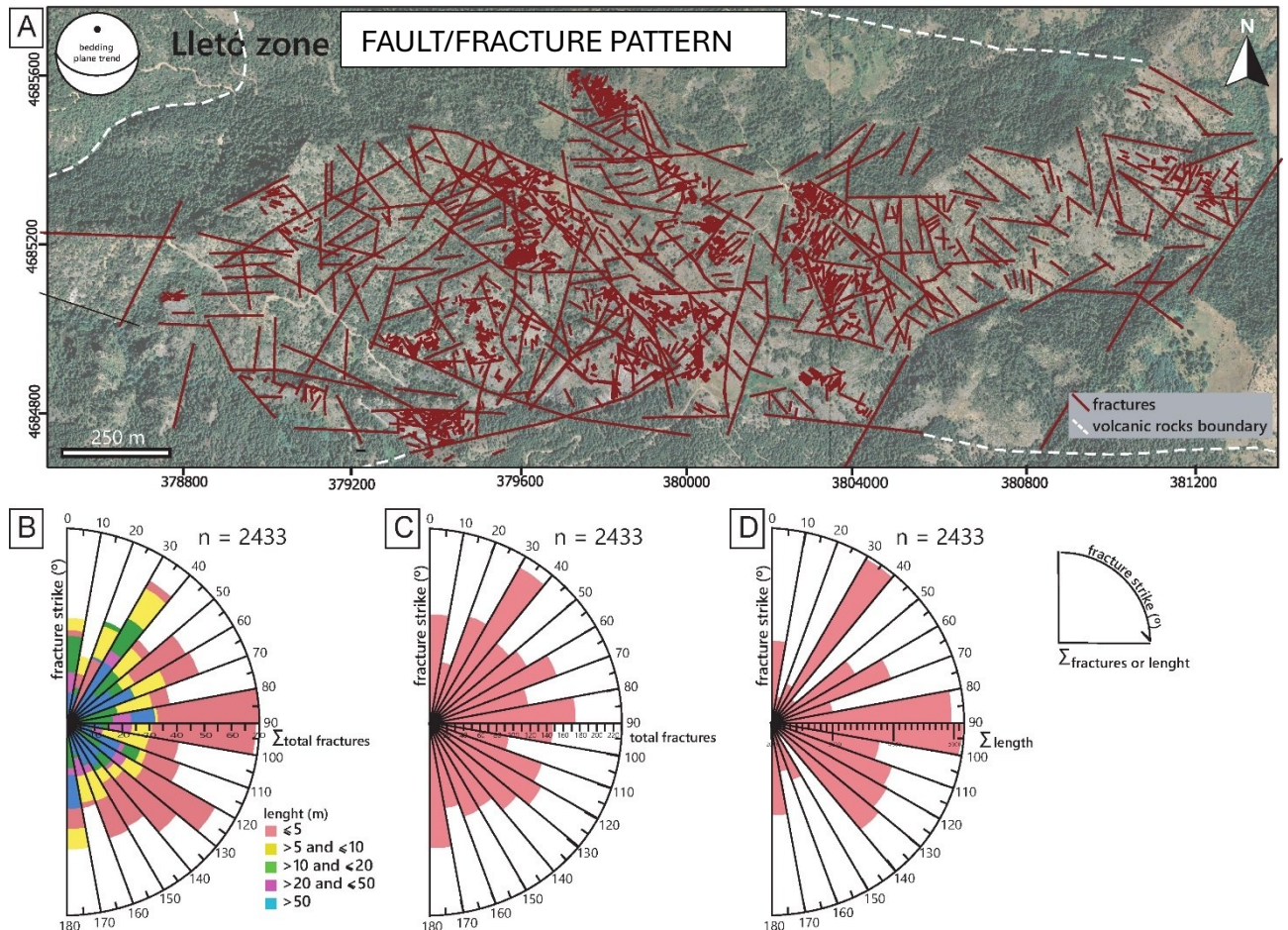


Density- Km diagrams at site level



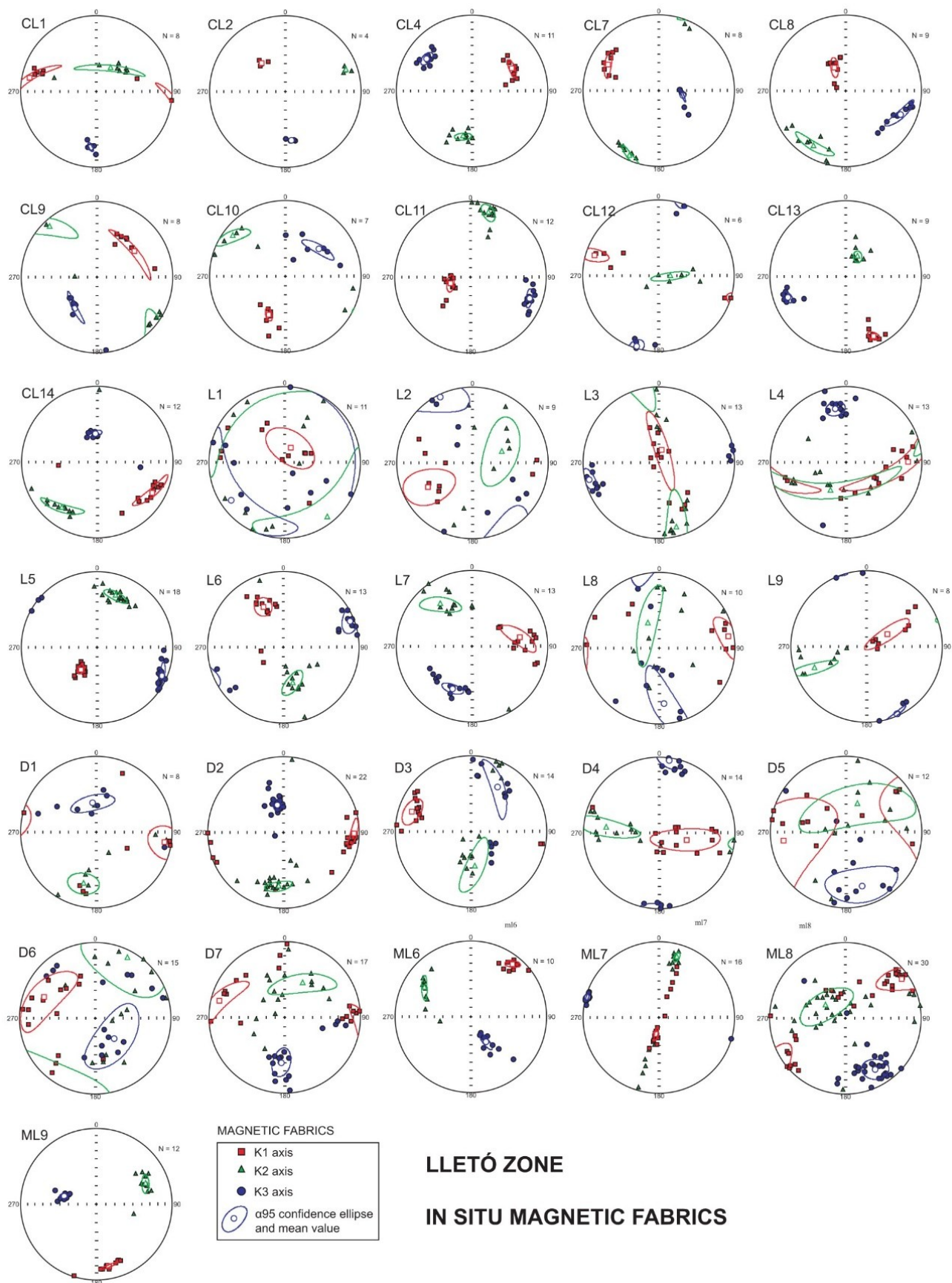
Supplementary material 4:

As previously mentioned in section *Fracture pattern and structural analyses* there are two main fracture sets in a E-W and in a N-S direction respectively, and only one conjugate fault system consisting of NE-SW and NWSE sets in the Lletó zone. Categorizing by their length, the most frequent structures are faults/fractures less than 5 m long in the E-W, NW-SE and NE-SW sets (pinkish color Supplementary material 4 B), followed by the 5-10 m length in the NE-SW and N-S sets (yellow color Supplementary material 4 B). Longer faults/fractures (more than 50 m) are included in the E-W, NE-SW and N-S sets (blue color in Supplementary material 4 B). The dominant strike directions (Supplementary material 4 C) for faults and fractures are a NE-SW (035) trend followed by the E-W (085) trend. The set of longer faults/fractures (sum of faults length with the same strike, Supplementary material 4 D) is the one with the i) E-W (090) direction with a scattering of $\pm 10^\circ$, followed by ii) NESW (035) $\pm 05^\circ$ direction, and iii) NW-SE (130) $\pm 10^\circ$ direction. In relation to the fracture pattern, the EW main set is parallel to the trend of the main structures of the Cadí Range.

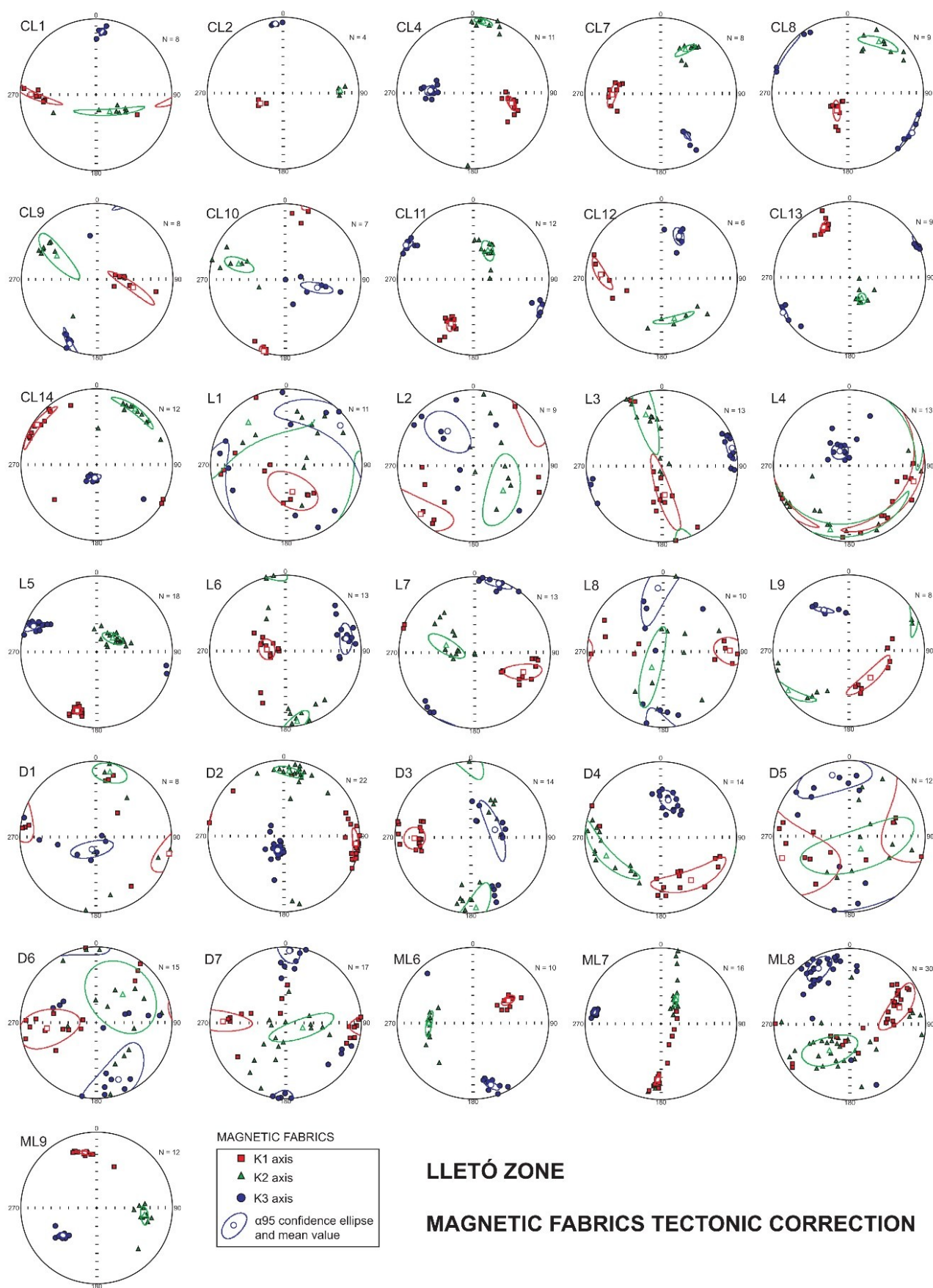


A) Color orthophotograph with the analyzed fracture pattern of the Lletó zone in situ (IGN, Spain, year 2011); B) Rose diagram showing fractures and faults weighted by strike and length (see color legend, where all colors have their origin at the center of the semicircle). C) Number of fractures and faults (X axis) respect to their strike. D) Sum of the length of fractures and faults (X axis) with the same strike.

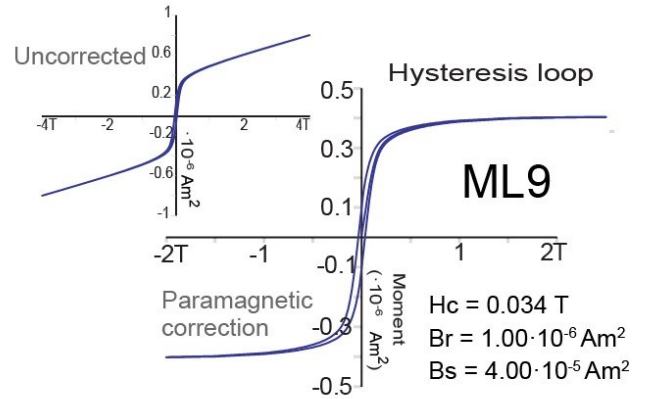
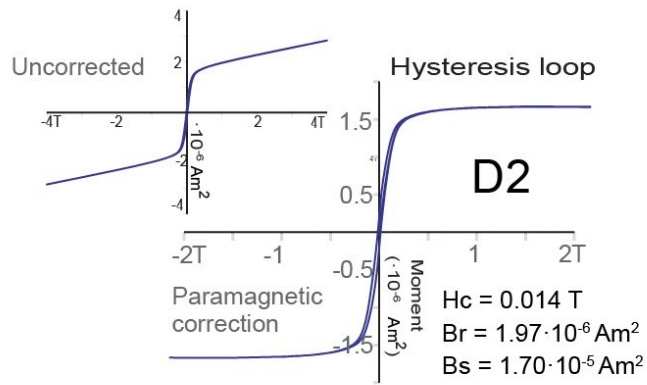
Supplementary material 5: magnetic fabrics *in situ* for the Lletó zone.



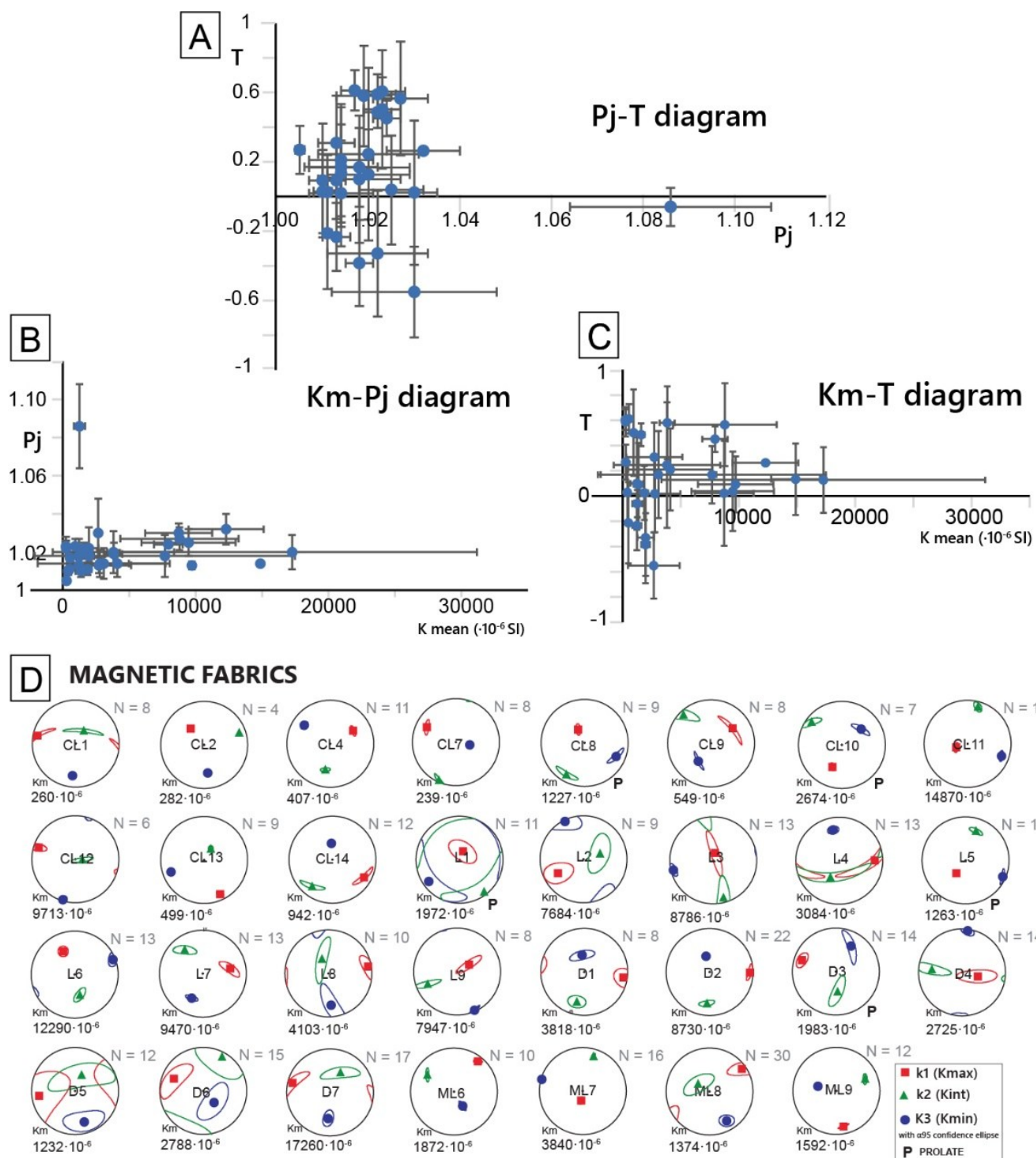
Supplementary material 6: magnetic fabrics after tectonic correction for the Lletó zone.



Supplementary material 7: Hysteresis loops present a remarkable paramagnetic contribution, and the wasp waist is not observed, thus pointing towards a single ferromagnetic phase.



Supplementary material 8: (Lletó zone): Magnetic ellipsoid scalar parameters, average per site with standard deviation, A) P_j (corrected anisotropy degree) versus T (shape parameter), B) K_m (mean magnetic susceptibility value) versus P_j and C) K_m versus T . Magnetic fabrics summary: D) Simplified, in situ magnetic fabric results: bulk magnetic susceptibility value, mean axes and the associated α_{95} confidence cone.



TABLES

profile 1: data for modeling			profile 2: data for modeling			profile 3: data for modeling		
Modelized body	Km ($\cdot 10^{-6}$ S.I.)	NRM (A/m)	Modelized body	Km ($\cdot 10^{-6}$ S.I.)	NRM (A/m)	Modelized body	Km ($\cdot 10^{-6}$ S.I.)	NRM (A/m)
1	200	-	1	200	-	1	6100	0.029
2	750	0.28	2	3000	0.09	2	30000	0.01
3	2000	0.1	3	200	-	3	20000	0.297
4	11000	0.01	4	1600	0.048	4	20000	0.1
5	3500	0.035	5	200	-	5	10000	0.786
6	2000	0.006	6	100	0.091	6	25000	0.048
7	2300	0.057	7	2500	0.2	7	10000	0.048
8	20000	0.57	8	3600	0.003	8	9000	0.053
9	7000	0.1	9	3000	0.007	9	17500	0.02
10	5000	0.007	10	5000	0.02	10	400	0.1
11	10000	0.007	11	200	0.001	11	9800	0.062
12	23000	0.57	12	500	0.1	12	30000	0.2
13	100	0.001	13	4700	0.085	13	20000	0.046
14	500	0.1	14	100	0.005	14	20000	0.001
15	1000	0.007	15	8000	0.005	15	10000	0.174
16	1000	0.001	16	100	0.004	16	25000	0.2
17	6800	0.007	17	8000	0.007	17	10000	0.096
18	200	0.1				18	9000	0.001
19	600	1.00E-04				19	17500	0.001
20	2000	0.04				20	400	0.01

Table 1: Summary of the magnetic parameters introduced in the model to model the magnetic anomalies: mean magnetic susceptibility (K_m) and natural remanent magnetization (NRM) values for each of the modeled bodies in the stratigraphic succession of the three profiles.

site	N	Km (-10-6)	Std.dev (-10-6)	in situ				restored				Pj	e	T	e	F	e	L	e
				Kmax	alfa95	Kmin	alfa95	Kmax	Kmin										
CL1	8	260	17.45	282/11	38/3	186/27	6/2	270/16	6/18	1.022	0.004	0.589	0.116	1.017	0.002	1.004	0.002		
CL2	4	282	5.58	320/50	-	173/36	-	246/63	354/9	1.005	0.001	0.269	0.138	1.003	0	1.002	0.001		
CL4	11	407	49.23	61/39	9/4	306/27	7/5	105/46	273/44	1.01	0.002	0.029	0.24	1.005	0.002	1.005	0.001		
CL7	8	239	67	297/26	13/4	101/64	8/1	269/37	148/35	1.023	0.005	0.605	0.082	1.017	0.004	1.004	0.001		
CL8	9	1227	384	334/62	11/4	113/22	19/5	212/68	122/0	1.013	0.003	-0.233	0.196	1.005	0.001	1.008	0.003		
CL9	8	549	88.68	55/40	32/4	215/48	19/3	103/50	203/8	1.017	0.003	0.612	0.116	1.013	0.002	1.003	0.001		
CL10B	7	2674	2221	204/44	7/3	51/42	19/5	197/2	104/54	1.03	0.018	-0.551	0.262	1.005	0.002	1.023	0.015		
CL11	12	14870	2108	253/67	9/4	110/18	9/4	207/35	297/0	1.014	0.001	0.133	0.283	1.008	0.002	1.006	0.002		
CL12	6	9713	3245	288/12	19/5	197/3	10/5	274/21	22/40	1.013	0.002	0.092	0.222	1.007	0.001	1.006	0.002		
CL13	9	499	111.6	155/14	8/3	250/20	6/4	333/26	242/1	1.011	0.001	-0.212	0.322	1.004	0.002	1.006	0.002		
CL14	12	942	130	119/18	22/5	356/59	7/3	304/6	189/76	1.023	0.004	0.502	0.342	1.016	0.005	1.005	0.002		
D1	8	3818	4571	98/10	23/13	353/58	24/9	103/1	197/76	1.02	0.011	0.245	0.498	1.01	0.004	1.009	0.009		
D2	22	8730	2525	91/8	13/4	347/60	6/4	96/5	203/73	1.03	0.005	0.022	0.416	1.014	0.006	1.014	0.007		
D3	14	1983	365	289/19	14/10	31/32	34/7	269/26	73/63	1.018	0.003	-0.384	0.248	1.006	0.003	1.012	0.002		
D4	14	2725	2412	104/59	40/12	8/4	13/8	145/31	12/48	1.013	0.004	0.309	0.273	1.008	0.003	1.004	0.002		
D5	12	1232	556	263/18	67/34	163/26	35/22	252/7	345/17	1.018	0.009	0.1	0.367	1.01	0.008	1.007	0.003		
D6	15	2788	2179	293/28	38/17	137/60	41/20	264/35	159/21	1.014	0.007	0.018	0.305	1.007	0.005	1.007	0.003		
D7	17	17260	13910	284/12	36/8	184/40	17/9	271/18	3/5	1.02	0.009	0.127	0.26	1.011	0.006	1.008	0.004		
LL1	11	1972	713	22/73	29/18	235/15	64/19	167/60	54/13	1.022	0.011	-0.329	0.362	1.006	0.004	1.014	0.01		
LL2	9	7684	9793	242/34	33/17	334/4	31/17	228/6	323/44	1.018	0.011	0.168	0.227	1.011	0.007	1.007	0.004		
LL3	13	8786	4455	12/76	46/8	256/6	10/7	174/59	76/5	1.027	0.006	0.565	0.328	1.02	0.007	1.005	0.005		
LL4	13	3084	4972	90/19	80/7	349/29	9/9	104/14	327/71	1.014	0.008	0.17	0.345	1.008	0.005	1.005	0.004		
LL5	18	1263	422	216/60	5/4	114/7	12/3	198/20	292/11	1.086	0.022	-0.06	0.109	1.04	0.012	1.045	0.011		
LL6	13	12290	2821	334/40	11/9	69/6	14/8	275/70	79/19	1.032	0.008	0.263	0.008	1.02	0.008	1.011	0.002		
LL7	13	9470	3539	80/36	23/7	205/38	11/5	112/31	19/4	1.025	0.007	0.038	0.314	1.013	0.006	1.011	0.004		
LL8	10	4103	3623	80/9	21/11	175/28	45/12	89/13	355/17	1.014	0.007	0.21	0.324	1.008	0.005	1.005	0.004		
LL9	8	7947	1085	59/64	30/7	156/3	11/2	141/53	329/37	1.024	0.003	0.451	0.102	1.017	0.003	1.006	0.001		
ML6	10	1872	300	38/12	8/4	149/59	11/3	57/44	164/17	1.011	0.003	0.025	0.214	1.006	0.002	1.005	0		
ML7	16	3840	648	189/72	7/2	286/2	3/2	183/27	280/13	1.019	0.006	0.58	0.29	1.014	0.002	1.004	0.004		
ML8	30	1374	405	55/10	32/10	150/23	15/11	72/32	331/17	1.01	0.003	0.093	0.328	1.006	0.003	1.004	0.002		
ML9	12	1592	292	169/18	9/2	284/54	5/3	345/26	231/42	1.022	0.003	0.486	0.091	1.016	0.002	1.005	0.001		

Table 2: Summary of magnetic scalar and directional data. N: number of specimens; Km: mean magnetic susceptibility value per site. K_{max} and K_{min} (trend and plunge) of the magnetic lineation and of the pole to the magnetic foliation (Jelinek, 1977) in situ and after the tectonic correction; Std.Dev: standard deviation for the Km; alfa95: major and minor semi-axes of the 95% confidence ellipse (Jelinek, 1977); Pj: corrected anisotropy degree (Jelinek, 1981); T shape parameter (Jelinek, 1981); F: K_{int}/K_{min}; L: K_{max}/K_{int}; e: standard deviation.

Supplementary material 9: density and mean magnetic susceptibility values (K_m), P_j and T parameters at specimen level.

Specimen	Density (g/cm ³)	K_m	P_j	T
LL1.2A	2.68	1.702E-03	1.014	0.2665
LL1.3A	2.78	3.169E-03	1.0123	-0.2922
LL1.3B	2.65	2.484E-03	1.0127	-0.4929
LL1.4A	2.58	1.874E-03	1.0072	-0.3326
LL1.5B	2.67	2.092E-03	1.0211	-0.6146
LL1.6A	2.67	1.861E-03	1.0365	-0.2193
LL1.7A	2.70	1.526E-03	1.0394	-0.7191
LL1.7B	2.72	1.419E-03	1.0392	-0.6277
LL1.8A	2.66	3.177E-03	1.0196	0.3885
LL2.1A	2.66	8.524E-03	1.0146	0.1587
LL2.1B	2.70	9.323E-03	1.0163	-0.2327
LL2.3B	2.77	1.477E-03	1.0119	0.0884
LL2.4A	2.70	4.339E-04	1.0101	-0.0368
LL2.4B	2.71	4.806E-04	1.0136	0.1734
LL2.5A	2.72	7.320E-04	1.0131	0.5892
LL2.5B	2.76	7.295E-04	1.0112	0.2988
LL2.6A	2.70	2.589E-02	1.0391	0.2237
LL2.6B	2.66	2.156E-02	1.0359	0.2489
LL3.1A	2.68	2.765E-03	1.0171	0.653
LL3.1C	2.66	3.261E-03	1.019	0.5824
LL3.2A	2.68	1.248E-02	1.0327	0.879
LL3.3A	2.57	7.891E-03	1.0302	0.7217
LL3.4A	2.69	8.711E-03	1.0199	0.407
LL3.4C	2.68	8.113E-03	1.0281	0.4227
LL3.7B	2.71	1.912E-02	1.0296	-0.2953
LL3.8A	2.65	7.962E-03	1.0377	0.6804
LL4.1B	2.63	9.868E-03	1.0189	-0.1045
LL4.2B	2.63	5.570E-04	1.0127	0.3935
LL4.3A	2.67	7.881E-04	1.0091	0.4241
LL4.3B	2.67	6.267E-04	1.0075	0.2693
LL4.3C	2.71	8.192E-04	1.0074	0.2952
LL4.4A	2.71	1.155E-02	1.0238	-0.0345
LL4.4B	2.71	1.367E-02	1.0275	0.2111
LL4.5A	2.63	4.417E-04	1.0036	-0.3252
LL4.5B	2.65	3.967E-04	1.0028	-0.5545
LL4.6A	2.61	4.011E-04	1.0103	0.6121
LL4.6B	2.64	3.442E-04	1.0227	0.4405
LL4.7A	2.59	3.305E-04	1.0158	0.0724
LL4.7B	2.58	3.041E-04	1.0174	0.5151
LL5.1A	2.70	1.895E-03	1.0732	0.0001
LL5.1B	2.71	1.932E-03	1.0641	-0.0323

Specimen	Density (g/cm ³)	K_m	P_j	T
LL5.1C	2.72	1.759E-03	1.0677	-0.0578
LL5.2A	2.70	1.922E-03	1.0858	0.0206
LL5.2B	2.71	1.892E-03	1.0781	-0.0556
LL5.3A	2.65	6.795E-04	1.0897	0.0099
LL5.3B	2.60	8.757E-04	1.1016	-0.0404
LL5.3C	2.68	1.264E-03	1.1547	0.0239
LL5.4A	2.68	1.274E-03	1.1074	0.0364
LL5.4B	2.66	1.191E-03	1.0888	0.044
LL5.5B	2.71	8.944E-04	1.0576	0.0729
LL5.6A	2.55	9.849E-04	1.0695	-0.0327
LL5.6B	2.71	1.163E-03	1.0848	-0.0584
LL5.6C	2.70	1.156E-03	1.1016	-0.1928
LL5.7A	2.67	8.992E-04	1.0714	-0.3022
LL5.7B	2.71	9.280E-04	1.0755	-0.2754
LL5.7C	2.71	9.804E-04	1.0868	-0.1888
LL5.7D	2.72	1.052E-03	1.0984	-0.0577
LL6.1A	2.65	1.518E-02	1.0273	0.1916
LL6.1C	2.68	1.390E-02	1.0319	0.4165
LL6.2B	2.67	1.598E-02	1.0353	0.4899
LL6.2C	2.66	1.649E-02	1.0368	0.5131
LL6.3A	2.66	1.148E-02	1.0207	0.0955
LL6.3B	2.65	1.406E-02	1.0289	0.1204
LL6.4A	2.58	9.940E-03	1.0249	0.1048
LL6.4B	2.63	1.176E-02	1.0238	-0.2636
LL6.4C	2.68	1.335E-02	1.0221	-0.1516
LL6.6A	2.69	9.736E-03	1.0438	0.4029
LL6.7A	2.65	7.047E-03	1.0318	0.4494
LL6.8A	2.68	9.561E-03	1.0426	0.5484
LL6.8B	2.69	1.123E-02	1.0441	0.505
LL7.1A	2.66	7.264E-03	1.0317	0.4157
LL7.1B	2.66	6.420E-03	1.0327	0.4735
LL7.2A	2.70	9.504E-03	1.0248	0.4151
LL7.2B	2.67	1.069E-02	1.0266	0.2704
LL7.4A	2.64	6.483E-03	1.0133	-0.187
LL7.5A	2.59	3.808E-03	1.0225	0.1235
LL7.5B	2.64	6.931E-03	1.025	-0.081
LL7.6A	2.66	6.799E-03	1.0198	0.103
LL7.7A	2.67	1.105E-02	1.027	0.0751
LL7.8A	2.72	1.065E-02	1.013	-0.3629
LL7.8B	2.71	1.464E-02	1.0242	-0.356
LL7.8C	2.71	1.426E-02	1.028	-0.4716
LL8.1A	2.67	2.33E-03	1.0106	0.3802
LL8.2A	2.64	4.41E-03	1.0204	-0.336
LL8.3A	2.67	3.37E-03	1.0086	0.2899
LL8.4A	2.62	7.67E-04	1.0098	-0.3126
LL8.4B	2.60	6.28E-04	1.0149	0.0856

Specimen	Density (g/cm ³)	Km	Pj	T
LL8.5A	2.58	1.58E-03	1.0078	0.6965
LL8.5B	2.66	1.65E-03	1.0085	0.1593
LL8.6A	2.70	1.10E-02	1.0269	0.3876
LL8.7A	2.70	9.46E-03	1.0219	0.3626
LL8.8A	2.63	5.88E-03	1.006	0.3874
LL9.1B	2.66	7.34E-03	1.0255	0.5288
LL9.2A	2.65	7.97E-03	1.0247	0.479
LL9.2B	2.67	8.51E-03	1.0271	0.5572
LL9.3A	2.65	6.74E-03	1.0203	0.4036
LL9.3B	2.65	6.82E-03	1.0184	0.3129
LL9.4A	2.69	9.41E-03	1.0241	0.3504
LL9.4B	2.69	9.46E-03	1.0263	0.3868
CL4-11	2.70	3.23E-04	1.0121	0.657
CL4-6	2.68	4.53E-04	1.0123	0.0086
CL4-5	2.72	4.10E-04	1.0099	0.0877
CL4-10	2.70	3.50E-04	1.0104	-0.1665
CL4-7	2.71	4.21E-04	1.0096	0.0524
CL4-8	2.72	3.64E-04	1.0087	-0.0882
CL4-4	2.71	4.30E-04	1.0097	0.0198
CL4-1	2.71	3.81E-04	1.0091	0.0639
CL4-2	2.70	4.30E-04	1.0139	-0.0459
CL4-3	2.67	4.95E-04	1.0099	-0.3136
CL4-9	2.69	4.24E-04	1.0098	0.0433
CL14-12	2.66	9.18E-04	1.0201	0.5081
CL14-11	2.67	1.29E-03	1.0143	-0.5419
CL14-2	2.66	8.06E-04	1.0245	0.6731
CL14-4	2.69	9.13E-04	1.0203	0.6856
CL14-3	2.69	9.61E-04	1.0277	0.7193
CL14-7	2.69	9.16E-04	1.026	0.5458
CL14-5	2.67	1.03E-03	1.0235	0.6231
CL14-6	2.66	1.01E-03	1.0216	0.616
CL14-8	2.69	9.29E-04	1.0244	0.5543
CL14-9	2.64	7.95E-04	1.02	0.4674
CL14-10	2.66	8.36E-04	1.0213	0.45
CL8-1	2.67	1.47E-03	1.0129	-0.4655
CL8-2	2.70	1.74E-03	1.0156	-0.4234
CL8-3	2.69	1.48E-03	1.0165	-0.5014
CL8-4	2.71	1.24E-03	1.008	-0.1595
CL8-5	2.58	8.08E-04	1.0159	-0.1667
CL8-6	2.59	7.28E-04	1.0142	-0.0165
CL8-7	2.65	1.11E-03	1.0099	-0.019
CL8-8	2.62	8.15E-04	1.0094	-0.3082
CL8-9	2.72	1.66E-03	1.0115	-0.041
CL11-1	2.64	1.71E-02	1.0153	-0.0817
CL11-2	2.58	1.73E-02	1.0152	-0.142
CL11-3	2.66	1.61E-02	1.0142	0.0762

Specimen	Density (g/cm ³)	Km	Pj	T
CL11-4	2.60	1.18E-02	1.0134	0.0335
CL11-5	2.59	1.63E-02	1.0141	-0.0077
CL11-6	2.65	1.53E-02	1.0164	0.7178
CL11-7	2.63	1.45E-02	1.0138	0.5269
CL11-8	2.64	1.34E-02	1.016	-0.054
CL11-11	2.59	1.19E-02	1.0128	0.0507
CL11-12	2.60	1.24E-02	1.0123	0.4268
CL7A-1	2.66	3.27E-04	1.0144	0.5374
CL7A-2	2.65	2.57E-04	1.0246	0.7074
CL7A-3	2.66	2.19E-04	1.0283	0.6526
CL7A-4	2.66	2.18E-04	1.0259	0.5875
CL7A-5	2.63	1.66E-04	1.0245	0.5624
CL7A-6	2.70	3.46E-04	1.0178	0.4611
CL7A-7	2.63	2.10E-04	1.0245	0.672
CL7A-8	2.62	1.68E-04	1.0245	0.6558
CL12-1	2.65	1.24E-02	1.014	-0.1163
CL12-2	2.63	1.38E-02	1.0141	-0.1196
CL12-3	2.67	1.11E-02	1.0105	0.2972
CL12-4	2.59	8.73E-03	1.0127	0.1745
CL12-5	2.54	6.32E-03	1.0133	-0.0644
CL12-6	2.56	5.94E-03	1.0109	0.3823
CL1-1	2.53	2.82E-04	1.0196	0.7153
CL1-2	2.52	2.53E-04	1.0174	0.6323
CL1-3	2.51	2.57E-04	1.0214	0.6442
CL1-4	2.56	2.61E-04	1.0248	0.6647
CL1-5	2.58	2.37E-04	1.0303	0.3728
CL1-6	2.54	2.85E-04	1.0237	0.6674
CL1-7	2.53	2.65E-04	1.0211	0.4852
CL1-8	2.56	2.40E-04	1.0199	0.5287
CL13-1	2.58	4.05E-04	1.0108	0.1864
CL13-2	2.56	4.24E-04	1.0106	-0.1913
CL13-3	2.59	4.14E-04	1.0111	-0.0534
CL13-4	2.54	3.72E-04	1.0106	0.3483
CL13-5	2.58	6.41E-04	1.0112	-0.4903
CL13-6	2.60	6.78E-04	1.0109	-0.5549
CL13-7	2.55	5.88E-04	1.0101	-0.5064
CL13-8	2.59	4.63E-04	1.0099	-0.2129
CL13-9	2.56	5.03E-04	1.0098	-0.4335
CL10B-1	2.68	5.88E-03	1.0461	-0.5605
CL10B-2	2.66	7.30E-04	1.0107	-0.2908
CL10B-3	2.69	3.36E-03	1.0516	-0.9248
CL10B-4	2.68	5.39E-03	1.0464	-0.8613
CL10B-5	2.69	7.34E-04	1.0115	-0.2356
CL10B-6	2.68	9.65E-04	1.0185	-0.4553
CL10B-7	2.69	1.66E-03	1.0234	-0.5265
CL9-1	2.65	5.42E-04	1.0158	0.6101

Specimen	Density (g/cm ³)	Km	Pj	T
CL9-2	2.65	5.87E-04	1.0154	0.5886
CL9-3	2.62	5.52E-04	1.0147	0.7645
CL9-4	2.65	6.81E-04	1.0197	0.6893
CL9-5	2.65	6.49E-04	1.0177	0.6343
CL9-6	2.67	4.80E-04	1.0228	0.7164
CL9-7	2.61	4.24E-04	1.016	0.4533
CL9-8	2.64	4.74E-04	1.0178	0.4431
MLL8-1	2.68	1.39E-03	1.0096	0.1742
MLL8-2	2.63	1.35E-03	1.0082	-0.3262
MLL8-3	2.62	1.84E-03	1.0046	-0.2446
MLL8-4	2.64	1.82E-03	1.0108	0.6813
MLL8-5	2.64	1.59E-03	1.0106	-0.1089
MLL8-6	2.67	1.36E-03	1.0115	0.1965
MLL8-7	2.62	1.42E-03	1.0067	0.3919
MLL8-8	2.62	2.49E-03	1.0094	-0.1207
MLL8-9	2.62	1.76E-03	1.013	-0.3262
MLL8-10	2.61	1.17E-03	1.0094	0.3194
MLL8-11	2.65	1.24E-03	1.0078	0.0563
MLL8-12	2.64	1.17E-03	1.0092	0.136
MLL8-13	2.65	1.85E-03	1.009	-0.3105
MLL8-14	2.63	1.15E-03	1.0094	-0.0186
MLL8-15	2.60	1.14E-03	1.0071	0.5357
MLL8-16	2.66	1.24E-03	1.0125	0.3118
MLL8-17	2.59	1.63E-03	1.0064	0.3053
MLL8-18	2.66	1.42E-03	1.01	0.1356
MLL8-19	2.63	9.63E-04	1.008	-0.3564
MLL8-20	2.62	8.63E-04	1.0128	-0.0335
MLL8-21	2.61	7.79E-04	1.0132	0.3042
MLL8-22	2.64	1.13E-03	1.0056	-0.516
MLL8-23	2.61	9.95E-04	1.0167	0.3538
MLL8-24	2.61	7.94E-04	1.009	-0.315
MLL8-25	2.56	1.01E-03	1.0146	0.359
MLL8-26	2.64	1.92E-03	1.0101	-0.3642
MLL8-27	2.66	1.96E-03	1.0104	0.2481
MLL8-28	2.64	1.22E-03	1.011	0.5913
MLL8-29	2.57	9.39E-04	1.0151	0.2692
MLL8-30	2.60	1.63E-03	1.0129	0.4632
MLL6-1	2.67	2.08E-03	1.012	0.1283
MLL6-2	2.67	1.64E-03	1.0102	0.0428
MLL6-3	2.69	1.48E-03	1.0077	-0.1314
MLL6-4	2.68	1.77E-03	1.0114	0.0537
MLL6-5	2.68	1.45E-03	1.0077	-0.2057
MLL6-6	2.66	2.26E-03	1.0136	0.2352
MLL6-7	2.68	1.91E-03	1.0101	-0.1774
MLL6-8	2.66	2.24E-03	1.0151	0.3435
MLL6-9	2.66	2.14E-03	1.0131	0.2372

Specimen	Density (g/cm ³)	Km	Pj	T
MLL6-10	2.67	1.77E-03	1.0081	-0.279
MLL7-1	2.68	5.28E-03	1.0357	0.0763
MLL7-2	2.67	3.75E-03	1.0163	0.8811
MLL7-3	2.67	4.65E-03	1.0238	0.2933
MLL7-4	2.63	3.27E-03	1.0177	0.7036
MLL7-5	2.65	4.13E-03	1.0198	0.217
MLL7-6	2.66	4.97E-03	1.0282	0.209
MLL7-7	2.68	3.89E-03	1.017	0.7688
MLL7-8	2.68	4.00E-03	1.0222	0.3558
MLL7-9	2.56	3.33E-03	1.0203	0.5183
MLL7-10	2.59	3.14E-03	1.0178	0.9469
MLL7-11	2.61	3.66E-03	1.0148	0.86
MLL7-12	2.60	3.53E-03	1.0151	0.8158
MLL7-13	2.51	2.92E-03	1.0169	0.8487
MLL7-14	2.59	3.55E-03	1.0157	0.8603
MLL7-15	2.61	3.58E-03	1.0112	0.3867
MLL7-16	2.63	3.80E-03	1.0176	0.5304
MLL9-1	2.64	0.001748	1.0239	0.3039
MLL9-2	2.66	0.001551	1.015	0.476
MLL9-3	2.64	0.001933	1.023	0.4675
MLL9-4	2.64	0.001511	1.0235	0.4733
MLL9-5	2.63	0.001764	1.023	0.4115
MLL9-6	2.65	0.001631	1.0243	0.4419
MLL9-7	2.66	0.00177	1.0223	0.565
MLL9-8	2.67	0.001497	1.0203	0.4781
MLL9-9	2.63	0.001987	1.0231	0.4321
MLL9-10	2.60	0.0009112	1.0202	0.6473
MLL9-11	2.63	0.001504	1.0235	0.5985
MLL9-12	2.67	0.00129	1.0235	0.5349
D1.1A	2.62	0.01027	1.0269	-0.0787
D1.1B	2.63	0.009252	1.0368	-0.2241
D1.3A	2.61	0.008383	1.0307	-0.3199
D1.4A	2.64	0.0005959	1.0191	0.8102
D1.5A	2.61	0.0005734	1.0082	0.7037
D1.5B	2.63	0.0003958	1.0125	0.8105
D1.8A	2.47	0.0003951	1.0095	0.4586
D1.8B	2.63	0.0006734	1.0149	-0.1996
D2.1A	2.70	8.77E-03	1.0359	0.3739
D2.2A	2.71	8.62E-03	1.0252	0.7756
D2.2B	2.70	9.99E-03	1.0261	0.8446
D2.2C	2.71	1.09E-02	1.027	0.5856
D2.3A	2.67	8.97E-03	1.0262	0.2815
D2.3B	2.68	1.11E-02	1.0233	0.102
D2.4A	2.69	1.15E-02	1.0312	0.4783
D2.4B	2.67	1.34E-02	1.0287	0.2262
D2.4C	2.67	1.12E-02	1.0229	-0.0583

Specimen	Density (g/cm ³)	Km	Pj	T
D2.5A	2.67	4.82E-03	1.0373	0.0115
D2.5B	2.67	5.51E-03	1.0321	-0.2194
D2.5C	2.66	5.73E-03	1.0354	-0.3363
D2.5D	2.67	6.23E-03	1.032	-0.6815
D2.6A	2.66	5.36E-03	1.0247	0.0503
D2.6B	2.70	5.92E-03	1.0377	0.1379
D2.6C	2.67	6.61E-03	1.0241	-0.0654
D2.7A	2.69	1.21E-02	1.0326	-0.0466
D2.7B	2.67	1.05E-02	1.0263	-0.5041
D2.7C	2.66	9.34E-03	1.0305	-0.4237
D2.8A	2.66	9.93E-03	1.0345	-0.2192
D2.8B	2.64	9.17E-03	1.0318	-0.4335
D2.8C	2.63	6.39E-03	1.0289	-0.3893
D3.1A	2.63	1.74E-03	1.0179	-0.1836
D3.1B	2.64	1.56E-03	1.018	-0.2799
D3.1C	2.63	1.76E-03	1.0195	-0.4635
D3.2A	2.64	2.19E-03	1.0218	-0.1761
D3.3A	2.63	2.40E-03	1.017	-0.2184
D3.3B	2.63	1.95E-03	1.014	-0.3141
D3.4A	2.64	2.26E-03	1.0199	-0.0342
D3.4B	2.62	1.67E-03	1.0161	-0.173
D3.5A	2.60	2.01E-03	1.0181	-0.428
D3.6A	2.60	1.85E-03	1.0143	-0.9251
D3.6B	2.58	1.27E-03	1.0115	-0.8178
D3.7A	2.67	2.50E-03	1.021	-0.4185
D3.8A	2.66	2.46E-03	1.0192	-0.4545
D3.8B	2.63	2.16E-03	1.02	-0.4887
D4.1A	2.68	2.15E-03	1.0138	0.4334
D4.1B	2.69	2.13E-03	1.0111	0.2904
D4.2A	2.69	4.98E-03	1.0128	-0.0678
D4.2B	2.70	6.43E-03	1.0196	0.1295
D4.3A	2.68	4.39E-03	1.0124	0.1858
D4.3B	2.69	4.13E-03	1.0119	0.1482
D4.4A	2.69	7.90E-03	1.0233	0.5191
D4.5B	2.70	6.86E-04	1.0101	0.4167
D4.6A	2.68	1.38E-03	1.0125	0.6137
D4.7A	2.68	9.05E-04	1.0134	-0.2329
D4.7B	2.68	1.03E-03	1.012	0.0975
D4.8A	2.66	6.11E-04	1.0087	0.5384
D4.8B	2.68	6.77E-04	1.0104	0.6195
D5.1A	2.63	5.65E-04	1.0142	0.063
D5.2A	2.63	7.86E-04	1.0183	-0.6604
D5.3A	2.56	1.55E-03	1.0163	-0.093
D5.4A	2.65	1.22E-03	1.0172	0.2732
D5.5A	2.64	7.44E-04	1.0181	0.1731
D5.6A	2.58	1.60E-03	1.0155	0.0715

Specimen	Density (g/cm ³)	Km	Pj	T
D5.6B	2.62	1.44E-03	1.017	-0.0031
D5.7A	2.61	5.45E-04	1.0039	0.0001
D5.7B	2.56	6.40E-04	1.0145	-0.309
D5.8A	2.49	1.97E-03	1.0415	0.5601
D5.9A	2.57	2.07E-03	1.0226	0.575
D5.9B	2.61	1.66E-03	1.0171	0.5515
D6.1A	2.59	4.54E-04	1.008	0.222
D6.1B	2.60	4.70E-04	1.0084	0.4539
D6.1C	2.61	3.82E-04	1.006	-0.0915
D6.2A	2.78	6.43E-03	1.0335	0.5146
D6.3A	2.62	3.34E-04	1.0085	0.0295
D6.4A	2.67	2.89E-03	1.0144	-0.0269
D6.5A	2.68	2.39E-03	1.013	-0.3363
D6.5B	2.67	1.90E-03	1.0138	-0.2624
D6.6A	2.68	2.75E-03	1.0091	-0.3678
D6.6B	2.68	3.31E-03	1.0127	0.118
D6.7A	2.71	4.45E-03	1.0112	0.0084
D6.7B	2.70	3.29E-03	1.0171	0.1544
D6.8A	2.67	1.20E-03	1.0213	-0.5362
D6.9A	2.66	7.49E-03	1.0175	0.3713
D7.1A	2.68	4.09E-03	1.0193	-0.0469
D7.1B	2.66	2.05E-03	1.0149	0.028
D7.2A	2.67	6.70E-03	1.0071	-0.3849
D7.3A	2.72	7.41E-03	1.0118	0.1277
D7.3B	2.72	7.95E-03	1.0116	0.3345
D7.3C	2.72	6.79E-03	1.0131	0.3544
D7.4A	2.68	1.17E-02	1.0181	0.3372
D7.4B	2.72	1.20E-02	1.0272	0.4232
D7.5A	2.71	1.30E-02	1.0169	0.3294
D7.5B	2.71	1.31E-02	1.0187	0.4103
D7.6A	2.74	3.26E-02	1.0269	0.2667
D7.7A	2.71	4.60E-02	1.0185	0.1324
D7.7B	2.72	4.76E-02	1.0162	-0.4184
D7.8B	2.71	1.08E-02	1.0147	-0.0864
D7.9A	2.68	2.82E-02	1.0336	-0.0688
D7.9B	2.68	2.39E-02	1.0379	0.1118
D7.9C	2.68	1.96E-02	1.0362	0.3039

