

Elastix parameter files

Rigid registration

```
(FixedInternalImagePixelType "float")
(MovingInternalImagePixelType "float")
(FixedImageDimension 3)
(MovingImageDimension 3)
(UseDirectionCosines "true")

// ***** Main Components *****

(Registration "MultiResolutionRegistration")
(Interpolator "LinearInterpolator")
(ResampleInterpolator "FinalBSplineInterpolator")
(Resampler "DefaultResampler")
(FixedImagePyramid "FixedSmoothingImagePyramid")
(MovingImagePyramid "MovingSmoothingImagePyramid")
(Optimizer "AdaptiveStochasticGradientDescent")
(Transform "EulerTransform")
(Metric "AdvancedMattesMutualInformation")

// ***** Transformation *****

(AutomaticScalesEstimation "true")
(AutomaticTransformInitialization "true")
(AutomaticTransformInitializationMethod "GeometricalCenter")
(HowToCombineTransforms "Compose")

// ***** Similarity measure *****

(NumberOfHistogramBins 32)
(ErodeMask "false")

// ***** Multiresolution *****

(NumberOfResolutions 3)

// ***** Optimizer *****

(MaximumNumberOfIterations 300)
(MaximumNumberOfSamplingAttempts 8.000000)
(RequiredRatioOfValidSamples 0.25)
(MaximumStepLength 4.0 2.0 1.0)

// ***** Image sampling *****

(NumberOfSpatialSamples 2048)
(NewSamplesEveryIteration "true")
(ImageSampler "RandomCoordinate")
```

```
// ***** Interpolation and Resampling *****

(FinalBSplineInterpolationOrder 3)
(DefaultPixelValue 0)
(ResultImagePixelType "float")

Affine registration
(FixedInternalImagePixelType "float")
(MovingInternalImagePixelType "float")
(FixedImageDimension 3)
(MovingImageDimension 3)
(UseDirectionCosines "true")

// ***** Main Components *****

(Registration "MultiResolutionRegistration")
(Interpolator "LinearInterpolator")
(ResampleInterpolator "FinalBSplineInterpolator")
(Resampler "DefaultResampler")
(FixedImagePyramid "FixedSmoothingImagePyramid")
(MovingImagePyramid "MovingSmoothingImagePyramid")
(Optimizer "AdaptiveStochasticGradientDescent")
(Transform "AffineTransform")
(Metric "AdvancedMattesMutualInformation")

// ***** Transformation *****

(AutomaticScalesEstimation "true")
(AutomaticTransformInitialization "true")
(AutomaticTransformInitializationMethod "GeometricalCenter")
(HowToCombineTransforms "Compose")

// ***** Similarity measure *****

(NumberOfHistogramBins 32)
(ErodeMask "false")

// ***** Multiresolution *****

(NumberOfResolutions 3)

// ***** Optimizer *****

(MaximumNumberOfIterations 300)
(MaximumNumberOfSamplingAttempts 8.000000)
(RequiredRatioOfValidSamples 0.25)
(MaximumStepLength 4.0 2.0 1.0)

// ***** Image sampling *****

(NumberOfSpatialSamples 2048)
```

```

(NewSamplesEveryIteration "true")
(ImageSampler "RandomCoordinate")

// ***** Interpolation and Resampling *****

(FinalBSplineInterpolationOrder 3)
(DefaultPixelValue 0)
(ResultImagePixelType "float")

Non-rigid registration
(FixedInternalImagePixelType "float")
(MovingInternalImagePixelType "float")
(FixedImageDimension 3)
(MovingImageDimension 3)
(UseDirectionCosines "true")

// ***** Main Components *****

(Registration "MultiMetricMultiResolutionRegistration")
(Interpolator "LinearInterpolator")
(ResampleInterpolator "FinalBSplineInterpolator")
(Resampler "DefaultResampler")
(FixedImagePyramid "FixedSmoothingImagePyramid")
(MovingImagePyramid "MovingSmoothingImagePyramid")
(Optimizer "AdaptiveStochasticGradientDescent")
(Transform "BSplineTransform")
(Metric "AdvancedMattesMutualInformation"
"TransformBendingEnergyPenalty")
(Metric0Weight 0.5)
(Metric1Weight 0.5)

// ***** Multiresolution *****

(NumberOfResolutions 4)

// ***** Transformation *****

(FinalGridSpacingInPhysicalUnits 20)
(HowToCombineTransforms "Compose")

// ***** Similarity measure *****

(NumberOfHistogramBins 32)
(ErodeFixedMask "false")
(ErodeMovingMask "false")

// ***** Optimizer *****

(MaximumNumberOfIterations 512 512 512 3064)
(MaximumNumberOfSamplingAttempts 8)

```

```
// ***** Image sampling *****

(NumberOfSpatialSamples 2048)
(NewSamplesEveryIteration "true")
(ImageSampler "RandomCoordinate")

// ***** Interpolation and Resampling *****

(FinalBSplineInterpolationOrder 3)
(DefaultPixelValue 0)
(ResultImagePixelType "float")
```