skfda.representation.interpolation.SplineInterpolator

class **skfda.representation.interpolation.SplineInterpolator**(*interpolation_order=1, smoothness_parameter=0.0, monotone=False*) [source]

Spline interpolator of `FDataGrid`.

Spline interpolator of discretized functional objects. Implements different interpolation methods based in splines, using the sample points of the grid as nodes to interpolate.

See the interpolation example to a detailled explanation.

interpolator_order

Order of the interpolation, 1 for linear interpolation, 2 for cuadratic, 3 for cubic and so on. In case of curves and surfaces there is available interpolation up to degree 5. For higher dimensional objects only linear or nearest interpolation is available. Default lineal interpolation.

Type: int, optional

smoothness_parameter

Penalisation to perform smoothness interpolation. Option only available for curves and surfaces. If 0 the residuals of the interpolation will be 0. Defaults 0.

Type: float, optional

monotone

Performs monotone interpolation in curves using a PCHIP interpolator. Only valid for curves (domain dimension equal to 1) and interpolation order equal to 1 or 3. Defaults false.

Type: boolean, optional

__init__(*interpolation_order=1, smoothness_parameter=0.0, monotone=False*) [source]

Constructor of the SplineInterpolator.

Parameters:

- **interpolator_order** (*int*, *optional*) – Order of the interpolation, 1 for linear interpolation, 2 for cuadratic, 3 for cubic and so on. In case of curves and surfaces there is available interpolation up to degree 5. For higher dimensional objects only linear or nearest interpolation is available. Default lineal interpolation.
- **smoothness_parameter** (*float*, *optional*) – Penalisation to perform smoothness interpolation. Option only available for curves and surfaces. If 0 the residuals of the interpolation will be 0. Defaults 0.
- **monotone** (*boolean*, *optional*) – Performs monotone interpolation in curves using a PCHIP interpolator. Only valid for curves (domain dimension equal to 1) and interpolation order equal to 1 or 3. Defaults false.

Methods

`__init__`([interpolation_order, ...])	Constructor of the SplineInterpolator.
`evaluator`(fdatagrid)	Construct a SplineInterpolatorEvaluator used in the evalu

Attributes

`interpolation_order`	Returns the interpolation order
`monotone`	Returns flag to perform monotone interpolation
`smoothness_parameter`	Returns the smoothness parameter