

THB-spline projectors based on restricted hierarchical spline fitting and their application to weighted isogeometric collocation

Bert Jüttler
Johannes Kepler University, Linz/Austria
bert.juettler@jku.at

We describe a construction of locally supported spline projectors for truncated hierarchical (TH) B-splines. These operators, which are based on restricted hierarchical spline fitting, can be used to generate approximations of functions in adaptively refined spline spaces [1]. We discuss the computational efficiency of the resulting algorithms. In addition, we show that these projectors can be employed successfully for the discretization of partial differential equations via isogeometric collocation. More precisely, we combine the framework of weighted isogeometric collocation [2] with the THB-spline projectors and discuss the computational efficiency of the algorithms and the convergence properties of the resulting discretization scheme [3].

Joint work with: Alessandro Giust

References

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