

Talk announcement

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Robust multigrid methods for biharmonic problem problems with application to PDE-constrained optimization using IGA

In this talk we present multigrid methods for the second biharmonic problem with a scalable lower-order term in the context of isogeometric analysis (IGA). We prove a multigrid convergence estimate using the Bramble framework. This estimate is independent of the scale of the lower-order term, the spline degree and with only a logarithmic dependence on the grid-size. In contrast to other works, these estimates does not require that the underlying grids are equidistant. Numerical experiments are provided which illustrate the convergence theory and the efficiency of the proposed multigrid approaches.