

Talk announcement

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A Posteriori Error Equalities for Very Regular Approximations of the Diffusion Equation and the Heat Equation

Functional type a posteriori error estimates for linear problems follows directly from estimates of the norm of the solution operator itself, provided that approximations are regular enough. We demonstrate this first for the diffusion equation, and then for the heat equation. In both cases the solution operator is an isometry, so one obtains error equalities. Most finite element methods do not produce approximations with the assumed regularity. However, numerical methods based on Isogeometric Analysis (IgA) do produce such approximations, and the error equalities presented can be utilized.