



Numerical integration on trimmed domains with high order of convergence

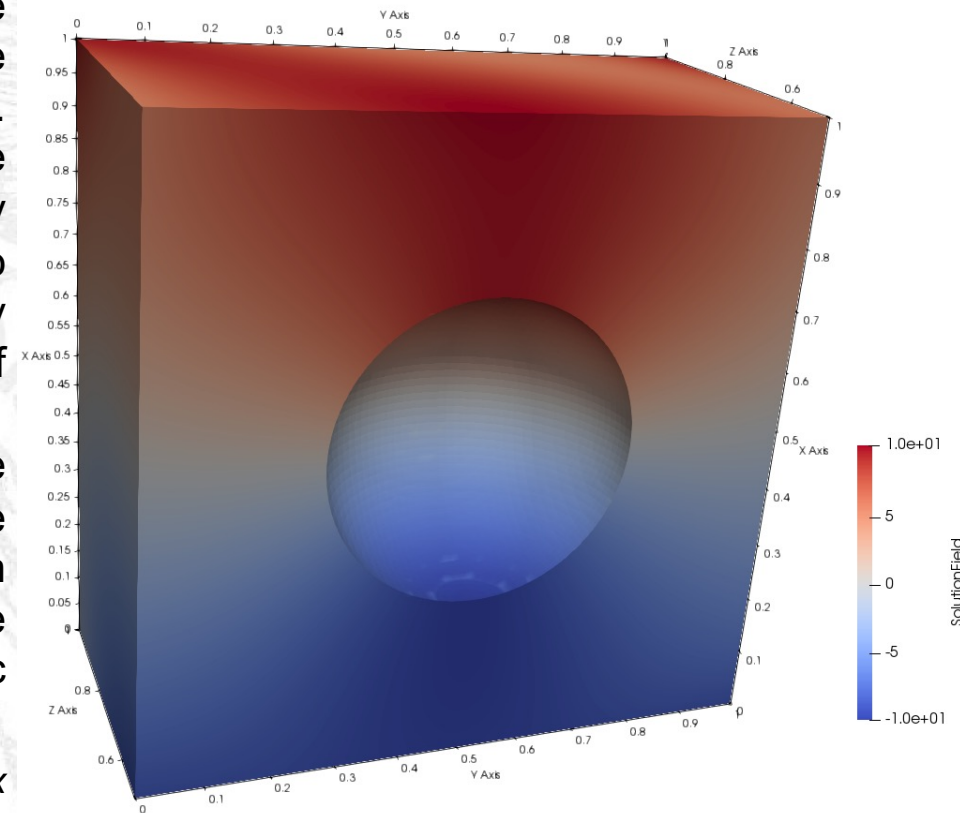
In this talk we discuss a new technique for the numerical integration on trimmed domains. The trimming domain is defined by an implicit function. The method goes beyond linear approximation of the trimming curve or surface inside cut elements by adding a correction term. This makes it possible to achieve a cubic convergence rate, instead of only quadratic obtained by using linear approximation of the boundary.

Using additional (correction) terms given by the Taylor expansion leads to even higher convergence rates. We analyze the complexity of the approach and present numerical experiments that demonstrate the method's potential for applications in isogeometric analysis.

The talk is based on joint work with Bert Juettler and Felix Scholz.

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