

Nitsche mortaring for parabolic initial-boundary value problems

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In this talk we present a method for the numerical solution of parabolic initial-boundary value problems in two-dimensional domains. The Nitsche-finite-element method (as a mortar method) is applied for the discretization in space, i.e. non-matching meshes are used. For the discretization in time, the backward Euler method is employed. The rate of convergence in some H^1 -like norm and in the L_2 -norm is proved for the semi-discrete as well as for the fully discrete problem. In order to improve the accuracy of the method in presence of singularities arising in case of non-convex domains, meshes with local grading are employed for the Nitsche-finite-element method.

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