An adaptive DG finite element method in the space-time domain

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For evolution equations we present a flexible space-time method based on Discontinuous Galerkin finite elements. Space-time methods have advantages when we have to deal with moving domains and if we want to do local refinement in the space-time domain. For this we use a residual based error estimator. This method will be applied to the heat equation and to the Navier Stokes equations. Numerical examples and some applications will be given.

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