

# Discontinuous Galerkin Methods

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The concept of applying time and space-time finite element approximations for initial- and initial-boundary value problems was pioneered in the late sixties and since then has been expanded and further developed through discontinuous spatial and temporal approximations in conjunction with the Galerkin method.

This tutorial deals with the formulation, implementation, and application of some potentially powerful temporal and spatial-temporal discontinuous Galerkin methods (DGM). The computational aspects of these methods as well as their applications to hyperbolic, parabolic and elliptic differential equations are reviewed, and an overview of the evolution of the DGM since their introduction until their most recent development is presented.