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1EA - SKYLAR REYNA

Discontinuous Galerkin methods for elliptic equations were independently proposed in the 1970s. Many variants were introduced and studied, which were generally called interior penalty (IP) methods. Their development was independent of that of the DG methods for hyperbolic equations. There are two basic ways to construct DG methods for elliptic problems.

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Discontinuous Galerkin Methods For Solving

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Discontinuous Galerkin methods for solving a hyperbolic ...

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This 1D SWE is then solved using the Discontinuous Galerkin Finite Element Method (DGFEM). The reason why we choose this method over the many numerical methods is because it combines the advantages of the FEM and FVM and seems to present well balanced solutions. In particular we use the Runge-Kutta DGFEM in ˙nding our solution

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Discontinuous Galerkin methods Lecture 1

Balanced discontinuous Galerkin methods for uid ow problems: design, implementation and application. The project has three distinct phases Phase 1: Design a new set of FEMs for solving convection di usion problems. Phase 2: Produce a working implementation of these in FEniCS. Phase 3: Apply these method to a physical river ow

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Discontinuous Galerkin Methods for Elliptic problems

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The discontinuous Galerkin method was first designed as an effective numerical methods for solving hyperbolic conservation laws, which may have discontinuous solutions. In this section we will discuss the algorithm formulation, stability analy-

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Discontinuous Galerkin Methods: General Approach and Stability

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