

Introduction

Interest in high-order CFD

- Promise to deliver lower error at equivalent cost
- May be less expensive than low-order methods, but still leave some simulations out of reach
- Systematic solution verification can ensure accuracy of the results
- Solution verification required to ensure robustness of the calculations

Adaptive methods

- Flowfield complexity precludes reliable error assessment by expert practitioners
- *a posteriori* error estimates offer most promise for robust error estimation and efficient mesh adaptation

Here we present a discretization of generalized nonlinear convection-diffusion equations using a hybridized discontinuous Galerkin method combined with output-based error estimation and mesh adaptation