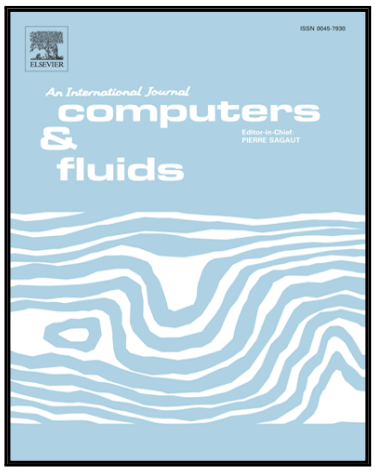

Towards Higher Order Discretization Error Estimation by Error Transport using Unstructured Finite-Volume Methods for Unsteady Problems

G.K. Yan, C. Ollivier-Gooch

PII: S0045-7930(17)30221-9
DOI: 10.1016/j.compfluid.2017.06.012
Reference: CAF 3517

To appear in: *Computers and Fluids*

Received date: 8 January 2017
Revised date: 25 May 2017
Accepted date: 14 June 2017

Please cite this article as: G.K. Yan, C. Ollivier-Gooch, Towards Higher Order Discretization Error Estimation by Error Transport using Unstructured Finite-Volume Methods for Unsteady Problems, *Computers and Fluids* (2017), doi: 10.1016/j.compfluid.2017.06.012

Highlights

- Accurate error estimates are found for unsteady flow by the error transport equation
- Higher order accuracy in error estimates is preserved if used to correct solutions
- Higher order in space and time is possible without discretizing both to higher order
- Co-advancing requires only local solutions in time, unlike unsteady adjoints
- Only one auxiliary equation needs to be solved, agnostic to choice of functionals