

Accepted Manuscript

Shock capturing for discontinuous Galerkin methods with application to predicting heat transfer in hypersonic flows

Eric J. Ching, Yu Lv, Peter Gnoffo, Michael Barnhardt, Matthias Ihme

PII: S0021-9991(18)30610-7
DOI: <https://doi.org/10.1016/j.jcp.2018.09.016>
Reference: YJCPH 8263

To appear in: *Journal of Computational Physics*

Received date: 3 November 2017
Revised date: 5 September 2018
Accepted date: 8 September 2018

Please cite this article in press as: E.J. Ching et al., Shock capturing for discontinuous Galerkin methods with application to predicting heat transfer in hypersonic flows, *J. Comput. Phys.* (2018), <https://doi.org/10.1016/j.jcp.2018.09.016>

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Highlights

- Developed a robust shock capturing method for DG schemes.
- Intraelement variations are used for shock detection.
- Smooth artificial viscosity is used for shock stabilization.
- Benchmarked heating predictions against FV solvers in hypersonic viscous flows.
- DG predictions exhibit reduced sensitivity to mesh topology and flux functions.

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