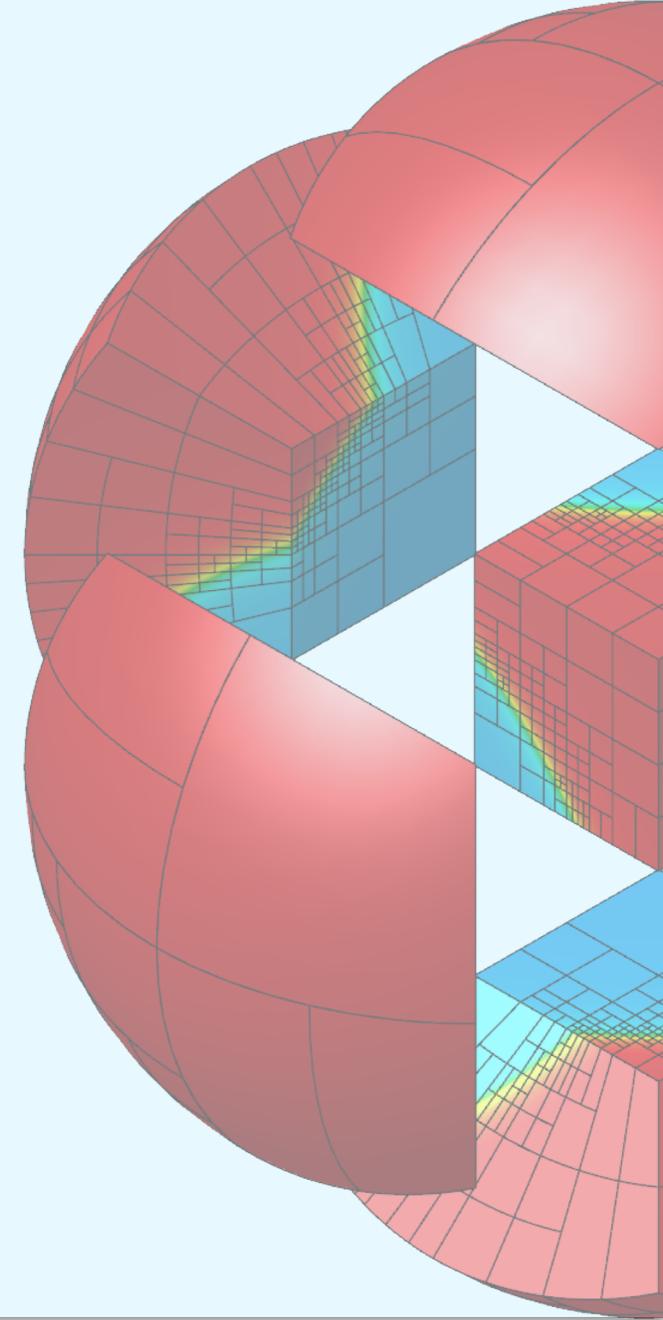


Simulation Contest



Simulation and Visualization Contest Winners!



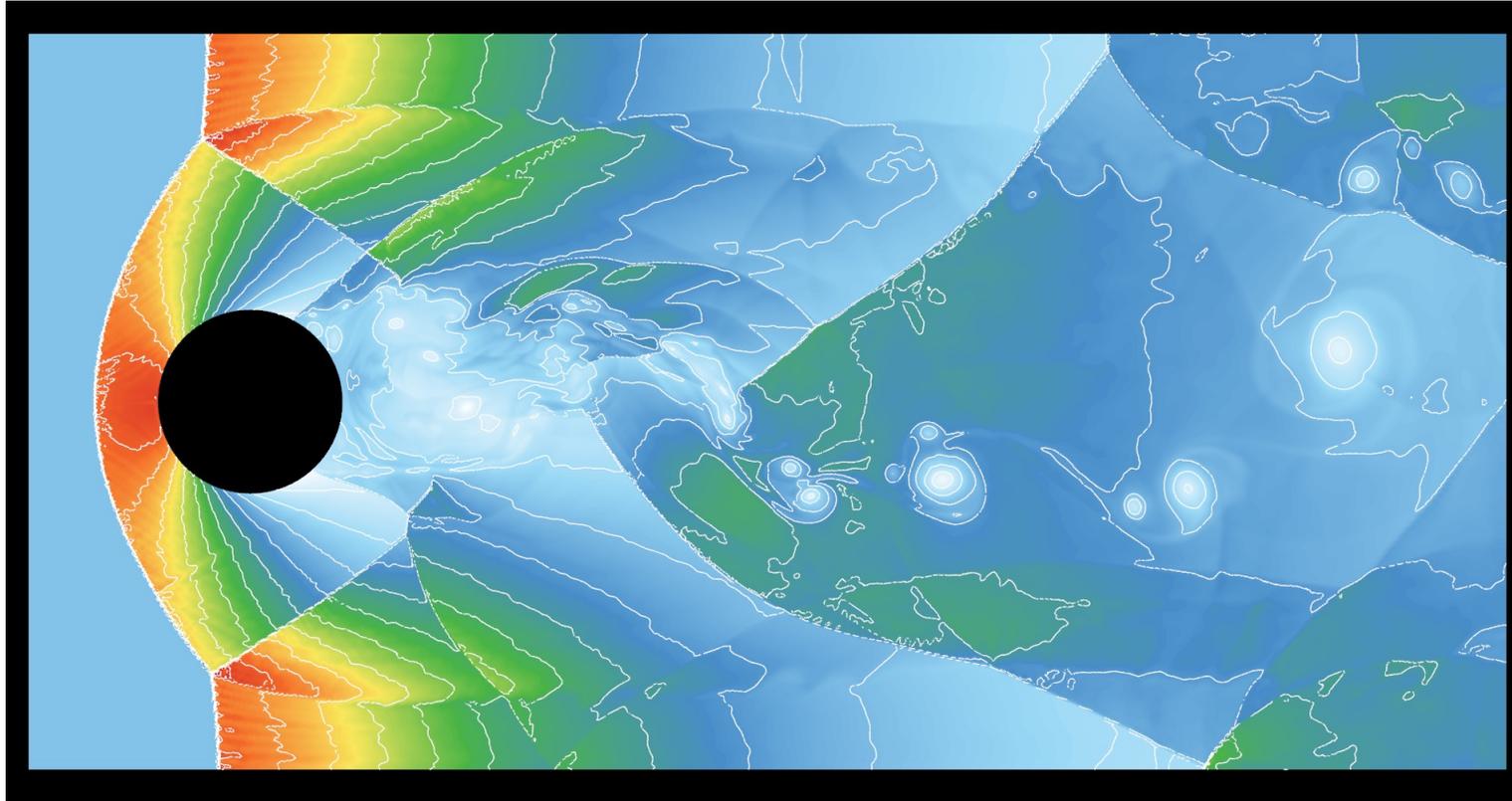
- We held a contest for the most interesting simulations and visualizations.
- So many good entries that we broke it into 2 categories, still images and animations.
- Entries were judged on aesthetic qualities, novelty of the approaches, and the notability of the application.
- Results will be featured on the MFEM webpage, and the winners will receive MFEM T-Shirts.



2nd Runner up for Still Images



2nd Runner up for Still Images



Compressible Euler simulation of mach 3 flow around a cylinder in 2D.

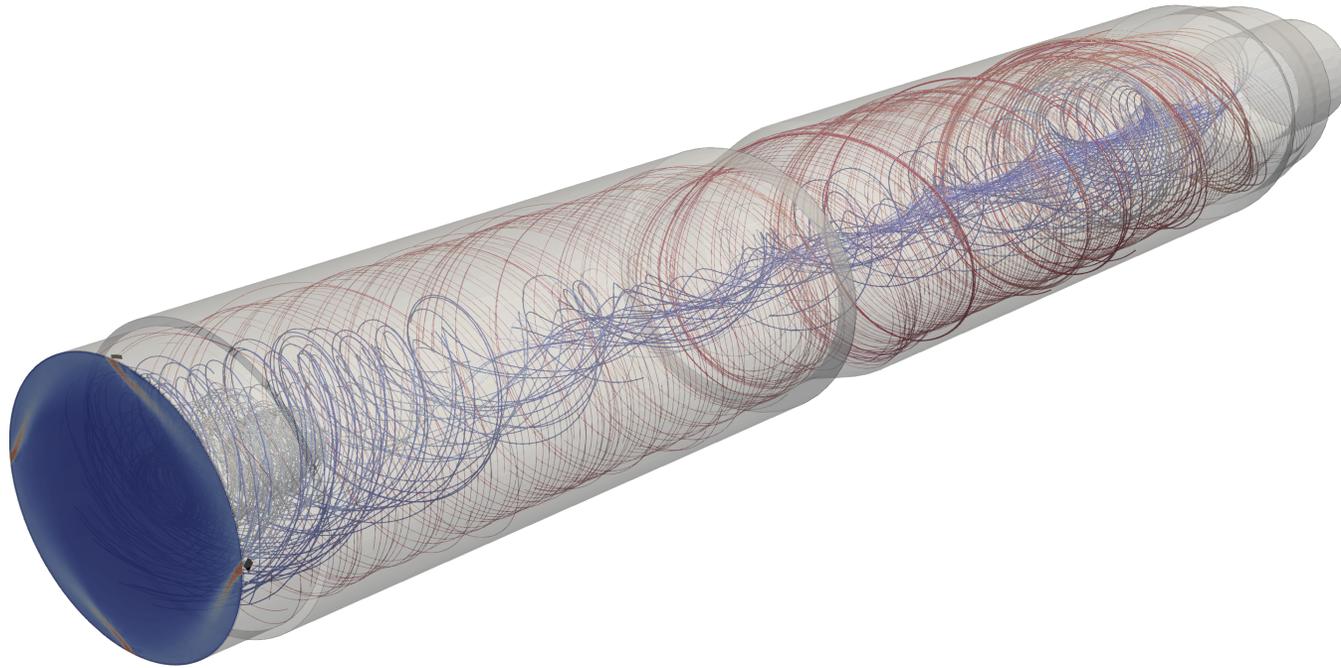
Hennes Hajduk
TU Dortmund University



Runner up for Still Images



Runner up for Still Images



Compressible Navier-Stokes simulation of gas injection in a cylindrical plasma torch. Simulation is resolving two large vortical structures in red and blue traveling in opposite directions.

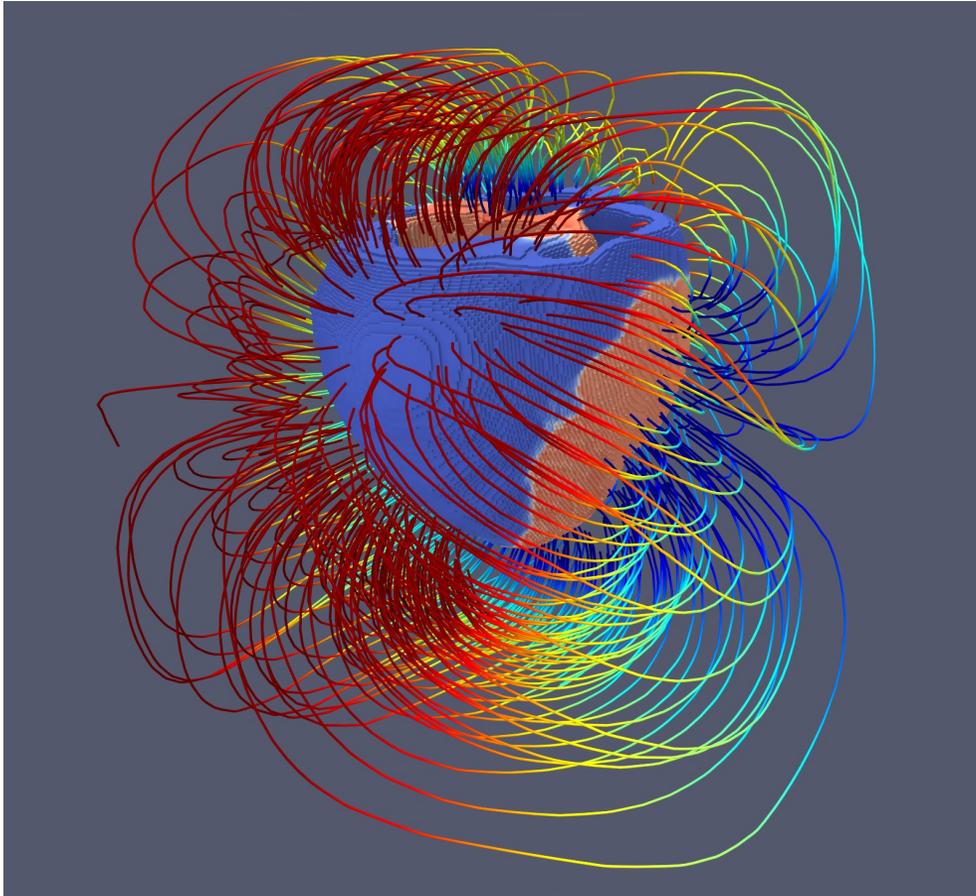
Karl W. Schulz
University of Texas



Winner for Still Images



Winner for Still Images



Visualization of the electric field generated by the electrical wave on rabbit heart ventricles during depolarization of the heart. The ventricles are embedded in a passive conducting volume. This model is an experimental setup for the investigation of QRS-waves in electrocardiograms emerging from the electrical activity of the ventricles.

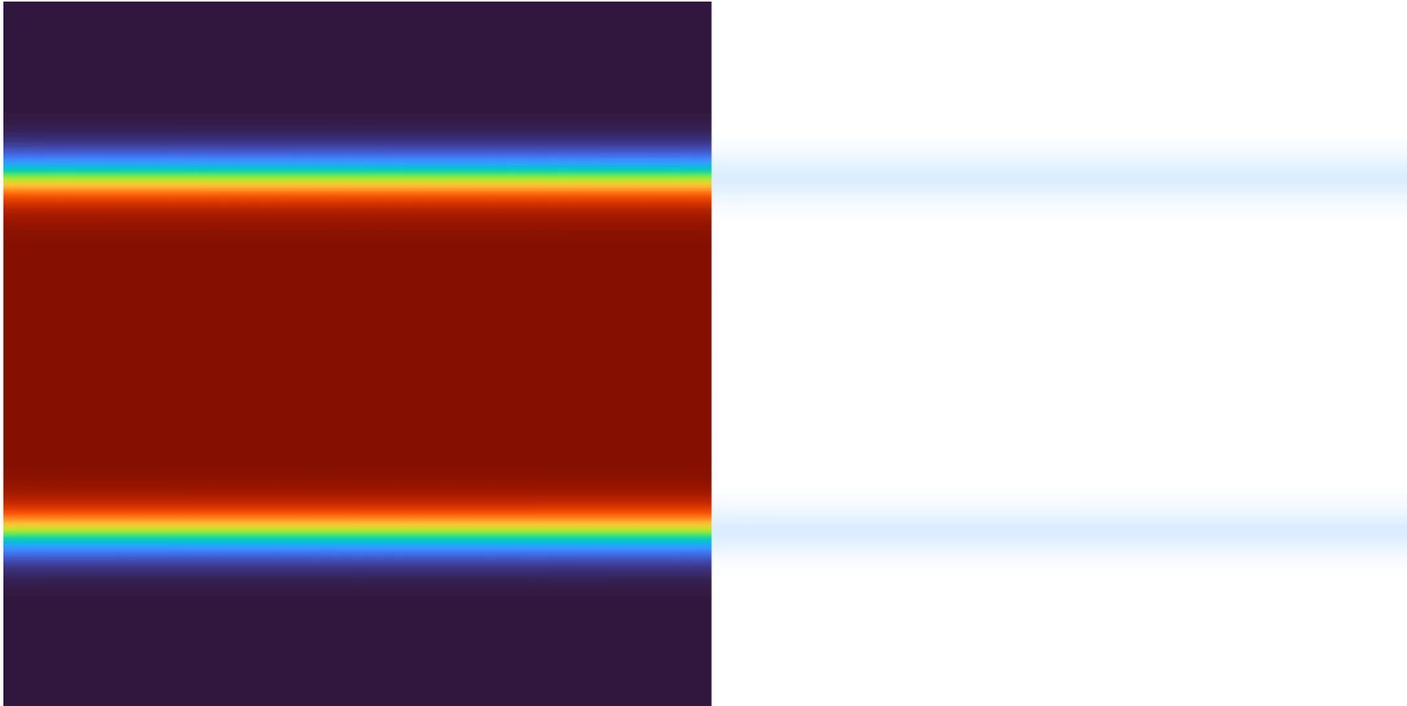
Dennis Ogiermann
Ruhr-University Bochum



2nd Runner up for Animations



2nd Runner up for Animations



Inviscid Kelvin-Helmholtz instability using high-order invariant domain preserving discontinuous Galerkin methods with convex limiting.

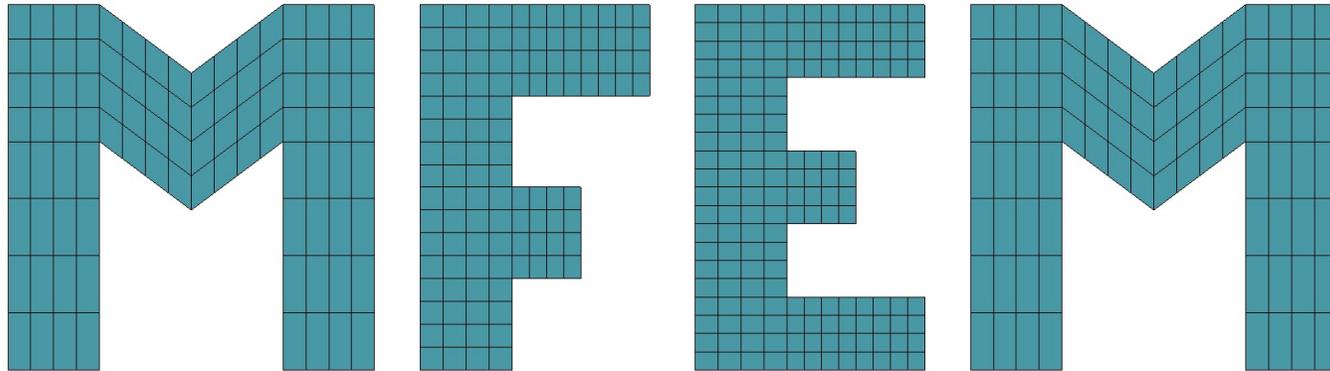
Will Pazner
LLNL



Runner up for Animations



Runner up for Animations



Compressible Euler simulation of blast waves in the Lagrangian frame on the MFEM logo.

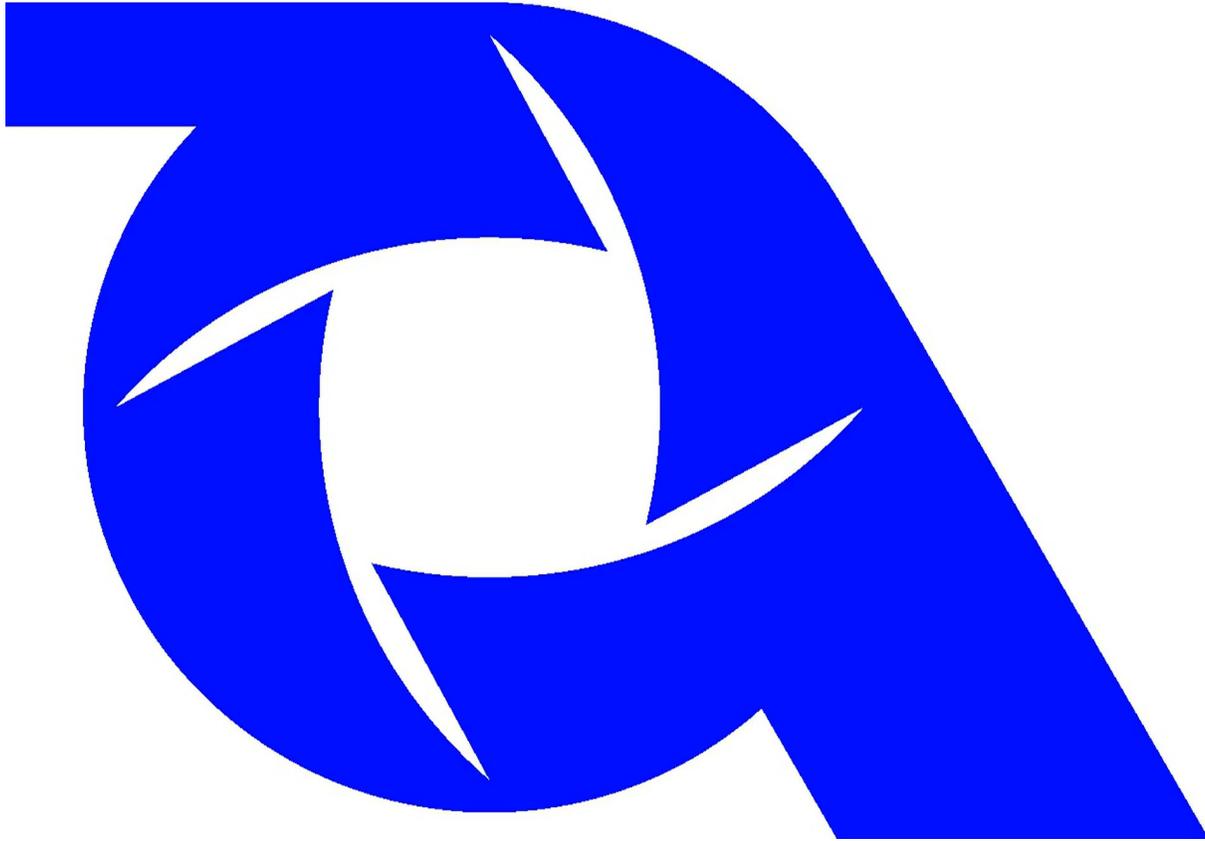
Vladimir Tomov
LLNL



Winner for Animations



Winner for Animations

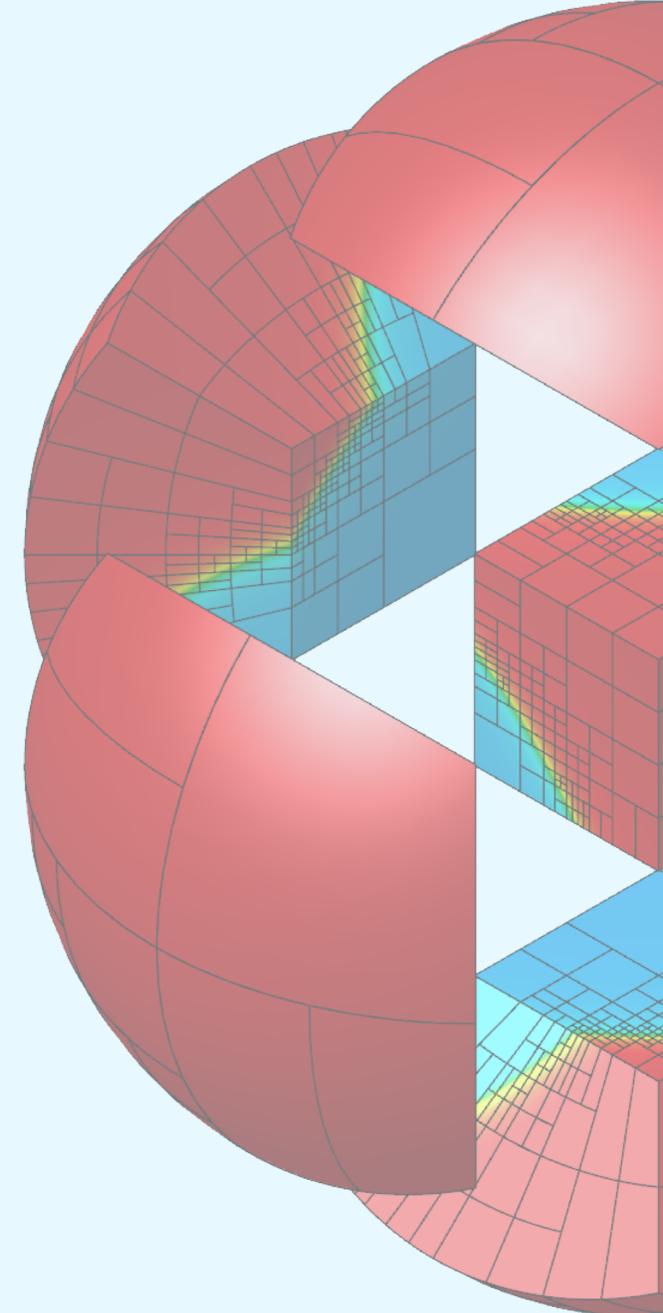


Incompressible fluid flow around a rotating turbine. Fluid-rigid body simulation using space-time embedded-hybridized discontinuous Galerkin discretization

Tamas Horvath
Oakland University



Wrapup



MFEM Resources



- Github:
 - Repo - <https://github.com/mfem/mfem>
 - Issues - <https://github.com/mfem/mfem/issues>
 - Group - <https://github.com/orgs/mfem/teams/everyone>
- mfem.org:
 - Front page – <https://mfem.org>
 - Workshops – <https://mfem.org/workshop>
- Publications:
 - MFEM: A Modular Finite Elements Library, Computers and Mathematics with Applications, June 2020
 - <https://mfem.org/publications>
- Planning a seminar series, stay tuned!
- Contact us:
 - Near term Slack - <https://mfemworkshop.slack.com>
 - Near term email – mfem@llnl.gov
 - Long term Github issues - <https://github.com/mfem/mfem/issues>

See you all next year!



Gratitude



- Applause for the speakers
- Many thanks to our discussion leaders: Mark Stowell, Julian Andrej, and Jamie Bramwell
- Special thanks to the workshop planning committee: Tzanio Kolev, Mark Stowell, Will Pazner, and Holly Auten
- Thank you all for attending.



Thank you from the MFEM team at LLNL!

