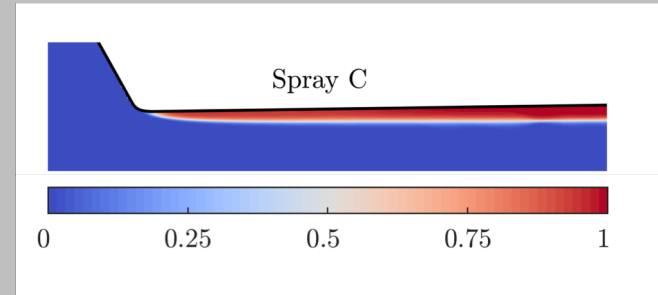


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ECN: CFD-ARCHIVE



MATHIS BODE
RWTH Aachen University

LYLE PICKETT
Sandia National Labs

ECN 6.2 TelCo

CFD-ARCHIVE

Need for searchable CFD archive, similar to experimental gasoline and diesel website tools

- Overview of existing simulations (similar to experiments) [small data size]
- Meshes, boundaries, ... [small – medium data size]
- Simulation results [big data size]
- Postprocessing scripts [small data size]

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Passing/sharing big data

- Openstack Cluster based
- Docker
- Jupyter
- First lunch in Jülich but container-based
- Data sharing e.g. Globus etc.

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Minimum posting requirements documenting initial conditions, boundary conditions, and model settings

- As much information with respect to boundary conditions, initial conditions, models, model parameters
- For openaccess/commercial codes input files
- We cannot expect people to share their own code

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Sharing meshes, surface geometries

- Documentation of how these data were created

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Generic format of output data (e.g. VTK)

- Idea is to start with some VTK based format (paraview, ensight)
- This allows simple processing and comparison of multiple cases but lacks accuracy
- If the archive is used, an extension to raw data is planned including operations for filtering, derivatives, slicing, ...

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Incorporation of processed data following ECN-guideline requests, including sharing of post-processing code/scripts

- Hope of continuous integration of new data sets which are then also used with respect to the guidelines
- Integration of postprocessing tools for online processing of data
- Aachen has just started to collect postprocessing scripts, hopefully other groups join

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Review process before release of archive

- 3-4 people committee which checks the documentation of the data
- If an accepted journal publication exists, scientific quality should be ok; if not, it should be checked by the committee
- Something to discuss: option of giving feedback to data by users

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Selection process for archival dataset, including transition from workshop submissions

- Template should be available

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Rules for data usage (citations, author approval)

- Authors should agree that submitted data can be used without further approval
- Users must cite the corresponding data source paper for the used data
- If a paper about the archive is published, users should also cite this