Biweekly MSc Thesis Progress Presentation – Lukas Strebel

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Completed Steps

- 'Hello World' example (on local machine)
  - 2 MPI4Py processors computing GT4Py stencils and sharing boundary
  - Two-way communication of boundary works (for dimension with stride needs a Numpy reshape for MPI datatype to recognize it as continuous)
  - One-sided MPI: Only with buffer for each boundary, not directly into the grid array

- First test case runs serial (on local machine)
  - Burger's equation with 2 different setups (different initial and boundary condition)

Worked on

- Model for decomposition before graph partitioning
  - GT4Py has a function to compute halo extends – how to access this information from outside GT4Py
- Calling the graph partitioning library from Python
  - PyMETIS (Wrapper) uses different input format (networkx graph or adjacency list) than METIS or Scotch

Thesis text progress

- Introduction / Background copied from proposal text

- Started on case study section for Burger's equation

Additional remarks

- Access to Greina
  - Account mail only says Ela and Daint
  - SSH to Greina still "Permission deneid"