Biweekly MSc Thesis Progress Presentation – Lukas Strebel

August 8, 2018

CSCS
Centro Svizzero di Calcolo Scientifico
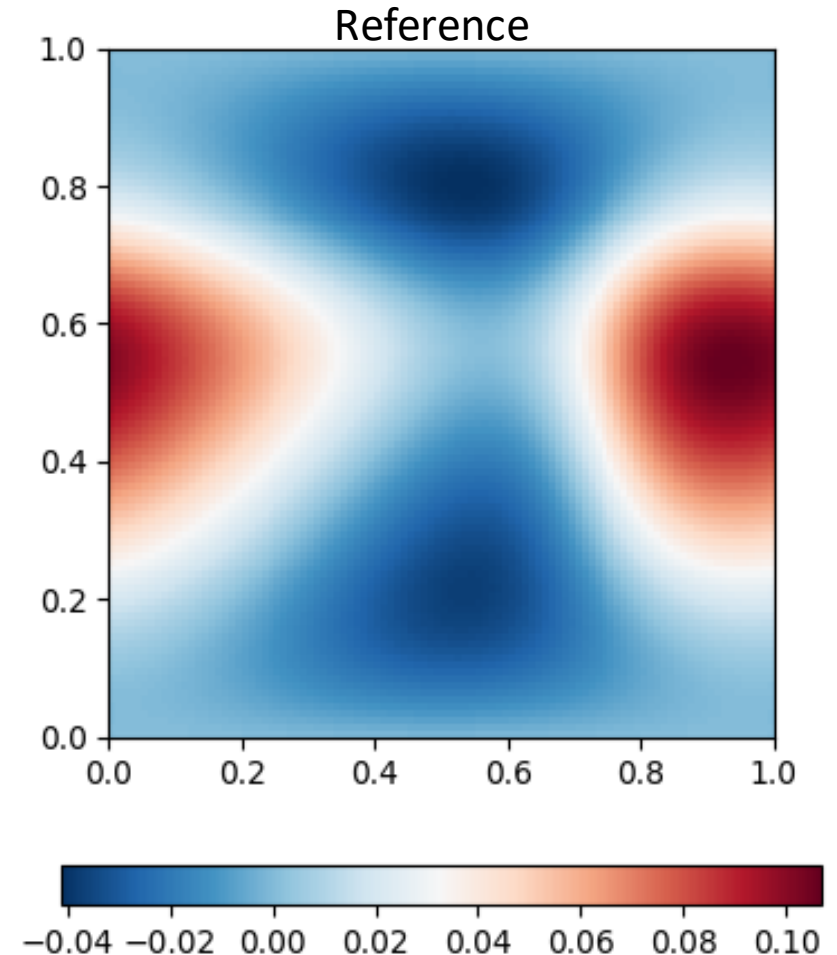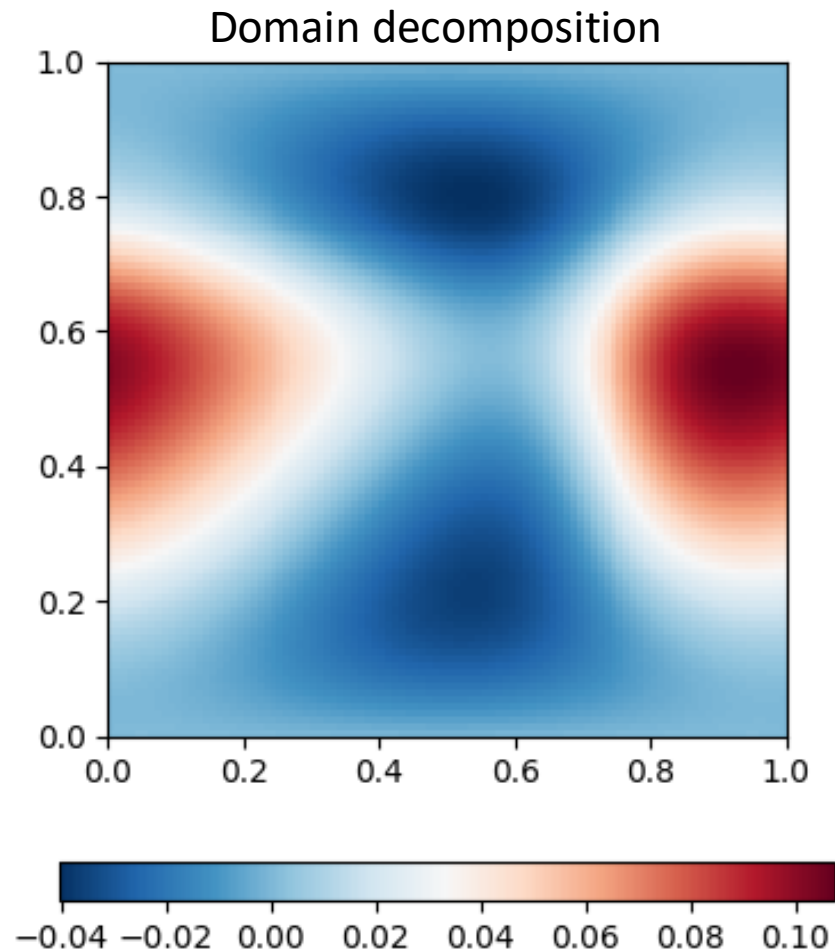Swiss National Supercomputing Centre

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Updates from last time

- Last time shown use case first results.

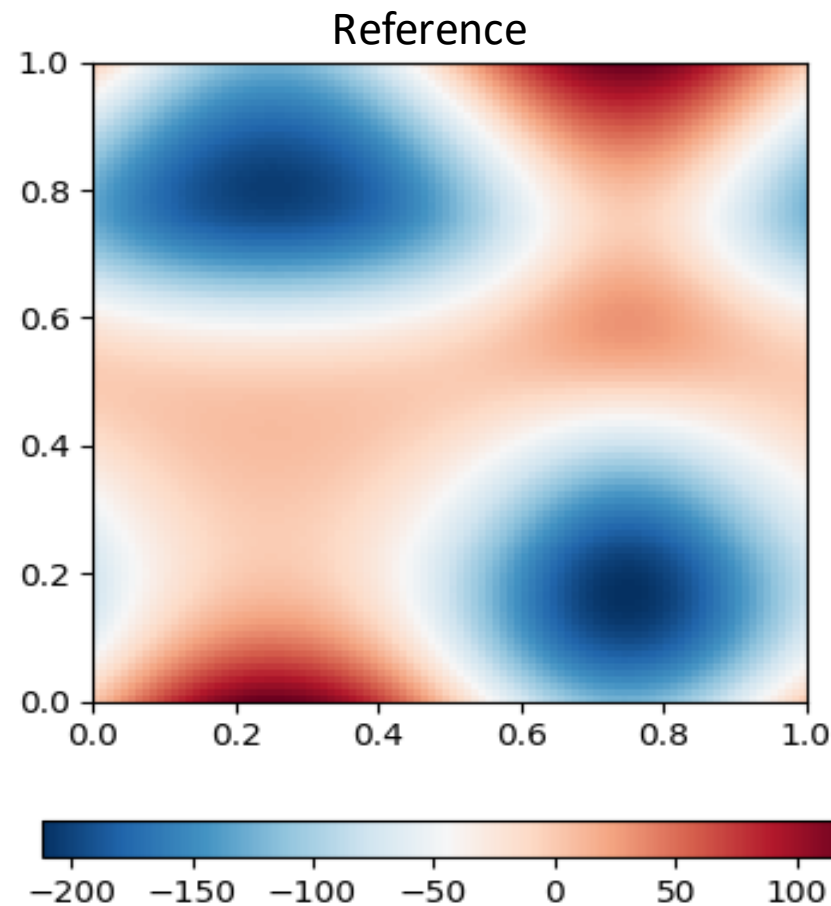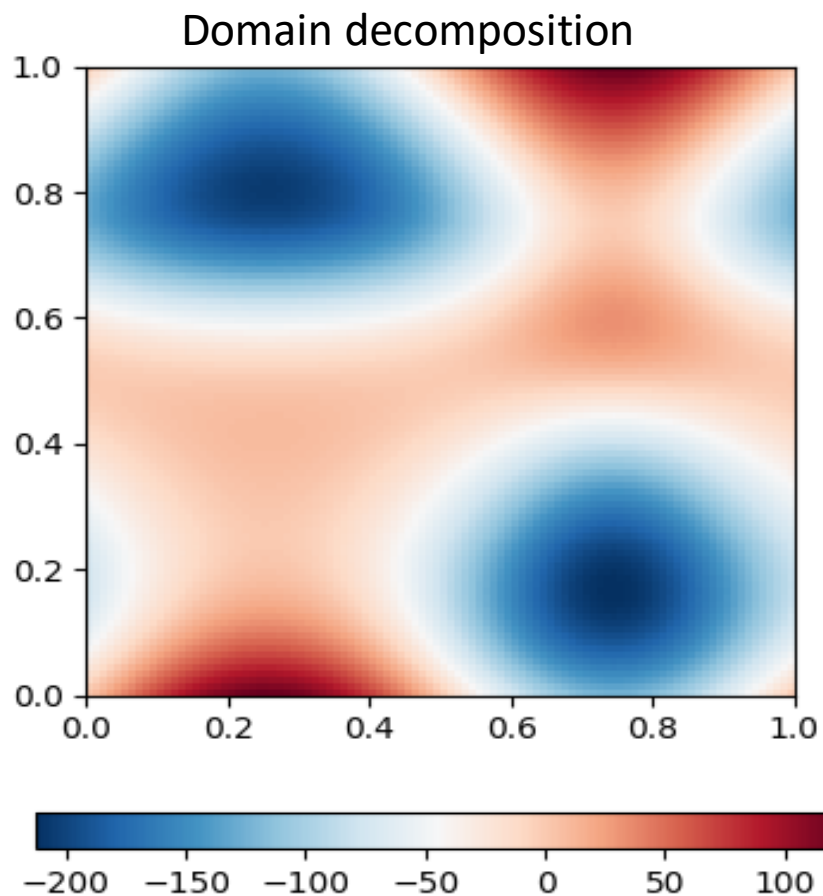- Completed more result validations.

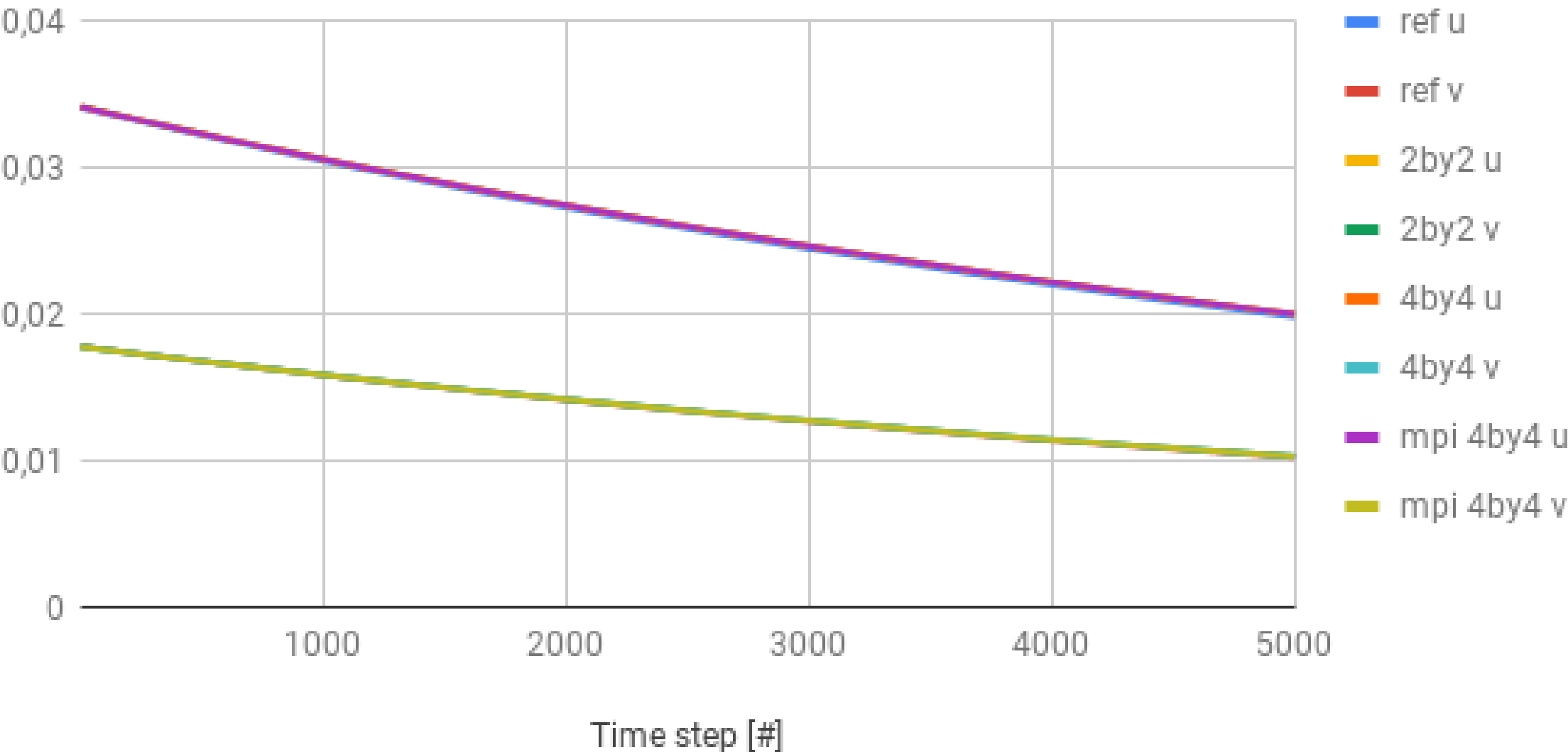# Error (average over 5000 time steps) Zhao Setup 100x100 Horizontal velocity

Error (average over 5000 time steps) Zhao Setup 100x100 Vertical velocity
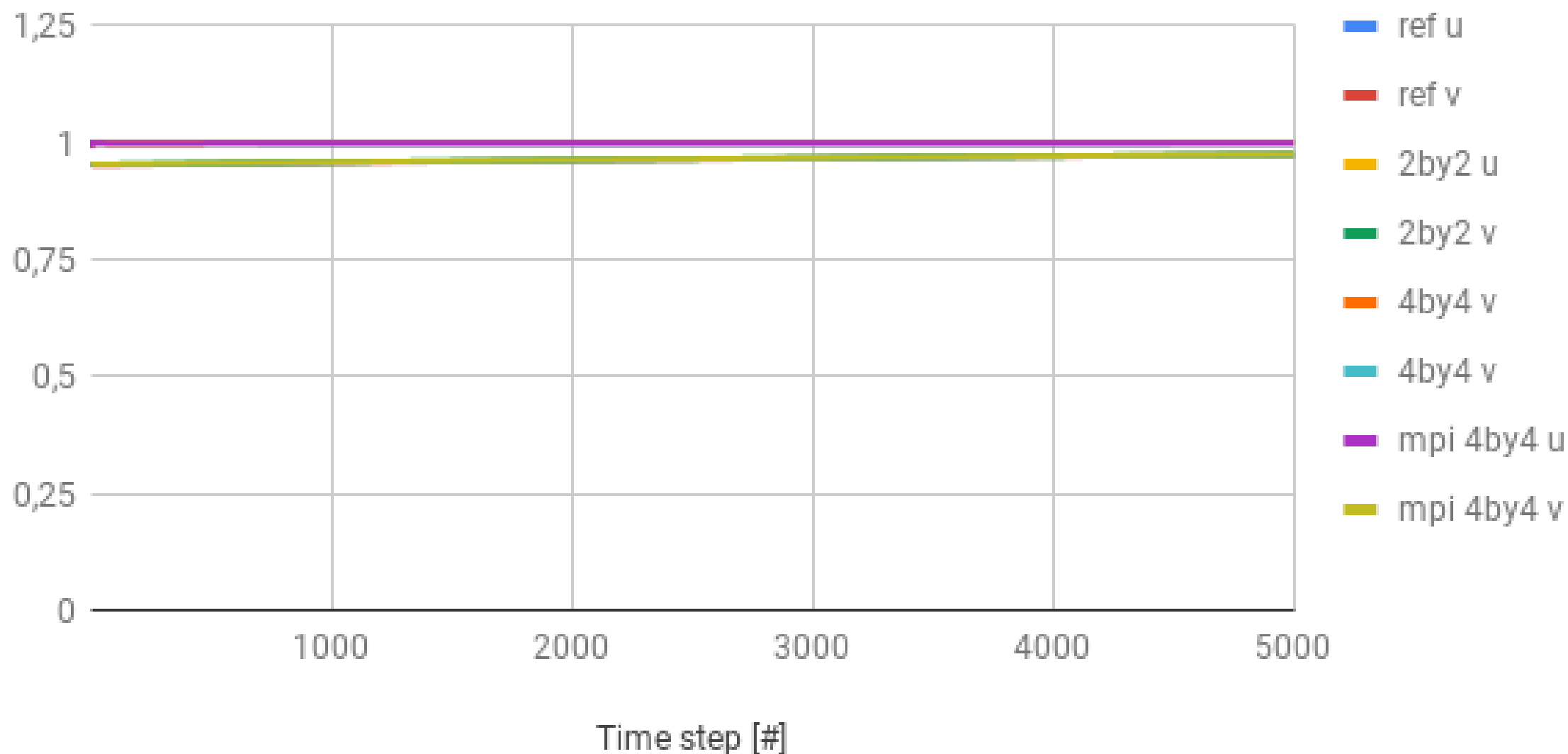
Burger's eq. Zhao Setup 100x100

Absolute Error

Legend:
- ref u
- ref v
- 2by2 u
- 2by2 v
- 4by4 u
- 4by4 v
- mpi 4by4 u
- mpi 4by4 v

Time step [#]

Burgers eq. Zhao Setup 100x100

Relative Error

Legend:
- ref u
- ref v
- 2by2 u
- 2by2 v
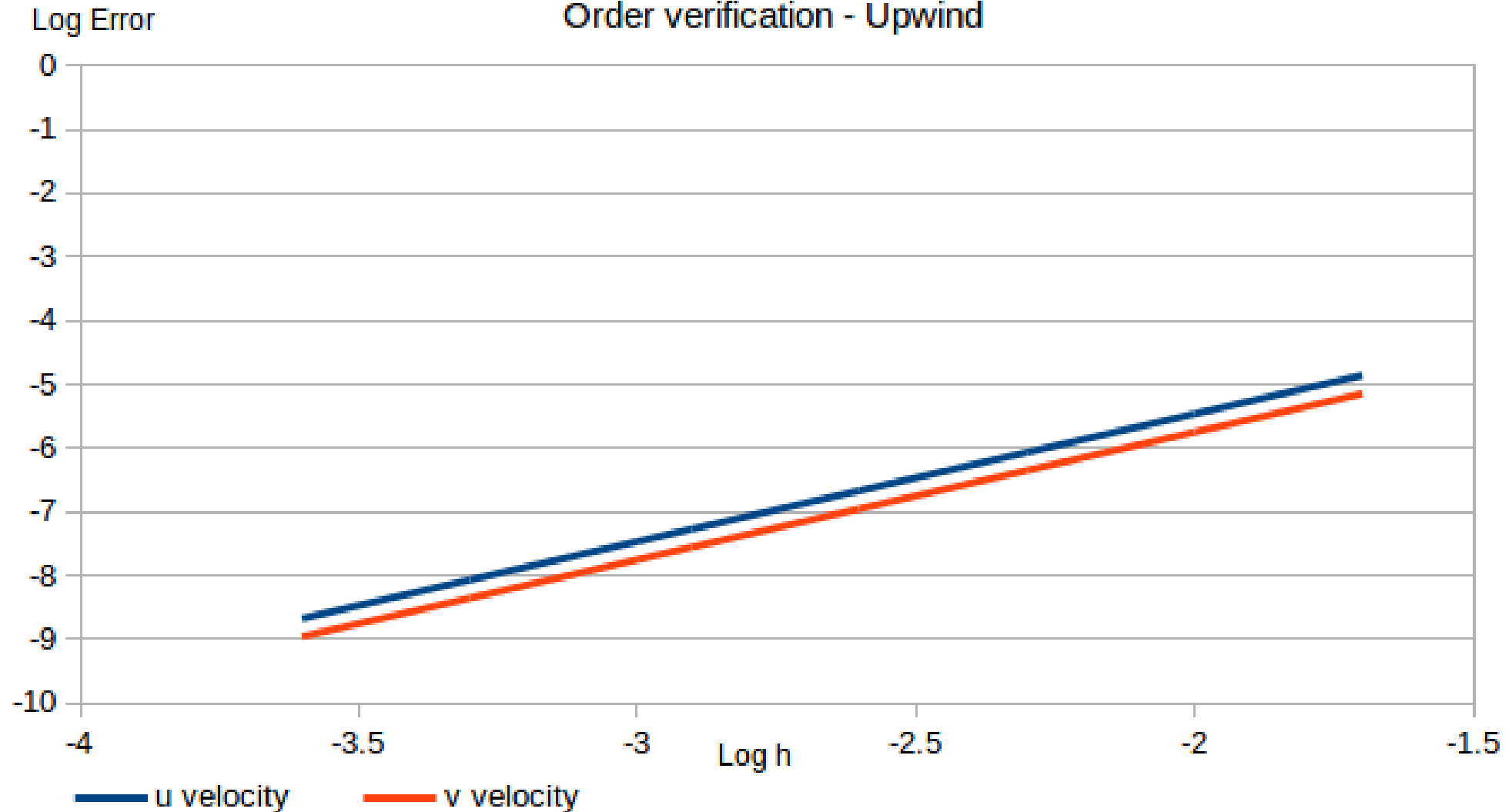- 4by4 v
- 4by4 v
- mpi 4by4 u
- mpi 4by4 v

Time step [#]

Grid refinement – Error convergence

Burgers eq. Zhao setup

Order verification - Upwind

Working on

- Thesis text

- Second use case from Stephano: Shallow Water Equation on a Sphere

Next Milestone – August 15

- Implementation of all library functionality.
- Library ready for benchmarks and optimizations.