

Goal:

Detailed Turbulent Flow Simulations at High Reynolds Numbers

Objectives:

To investigate efficient numerical algorithms for Computational Fluid Dynamics

To make state of the art implementations on modern computer systems

Results:

Convergence

Performance metrics

Algorithm

Cost analysis

Indicators of success:

Simulation of turbulent flow in a pipe

First port to FPGAs

GPU implementation that performs 80-90% of roofline

