



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

High-Performance Computing Lab for CSE

2024

Student: Benedict Armstrong

Discussed with: Tristan Gabl

Solution for Project 6

Due date: Monday 27 May 2024, 23:59 (midnight).

1. Introduction

All benchmarks and programs were run on the **Euler VII — phase 2 cluster** with **AMD EPYC 7763** cpus unless explicitly specified otherwise.

2. Graph Partitioning with Julia: Load balancing for HPC [50 points]

Apart from the initial setup working with `julia` on euler was straightforward. The code for all implementations is available in `code/graph_part/`.

2.1. Inertial bisection

2.2. Spectral bisection

2.3. Recursive bisection

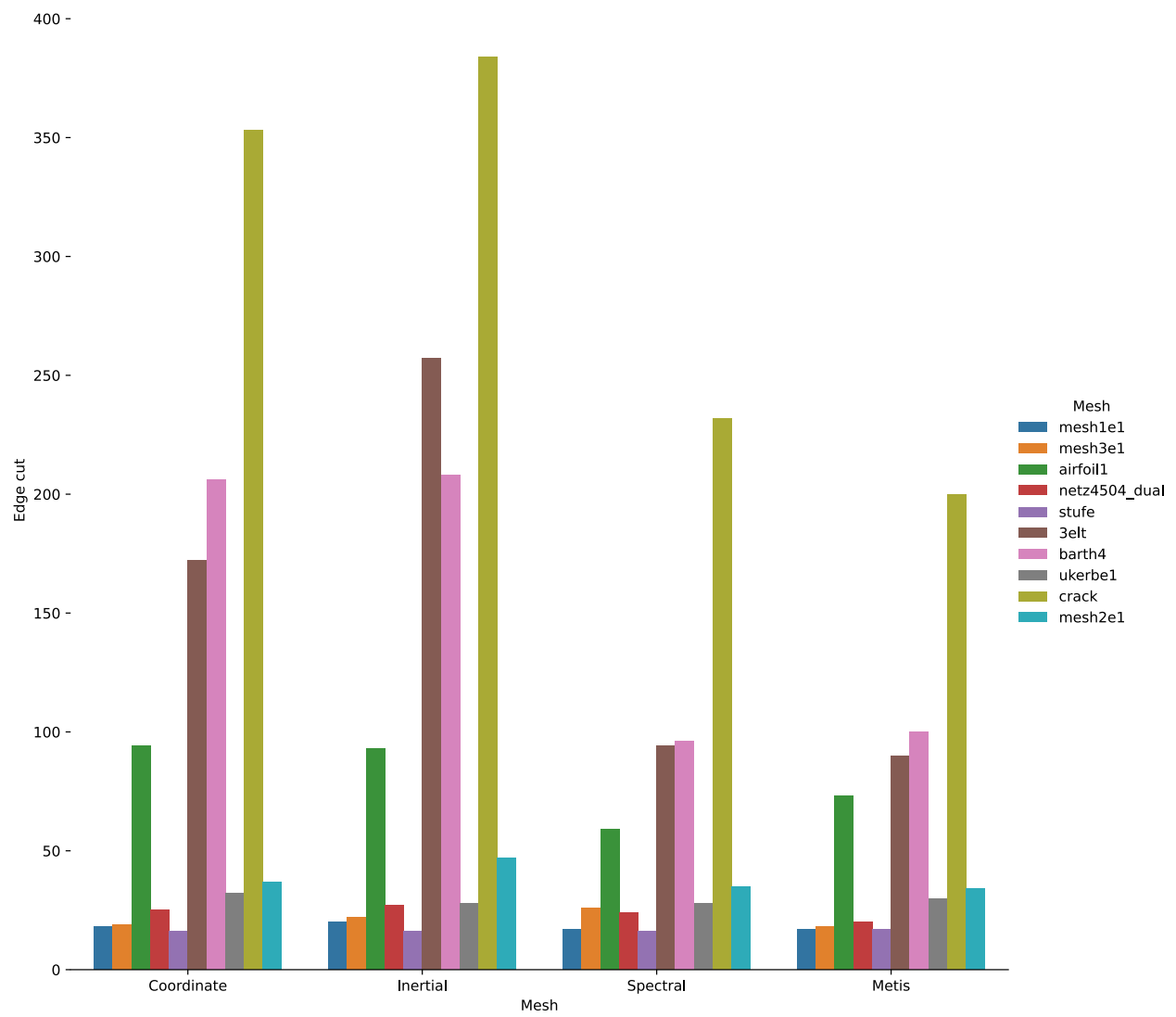


Figure 1:

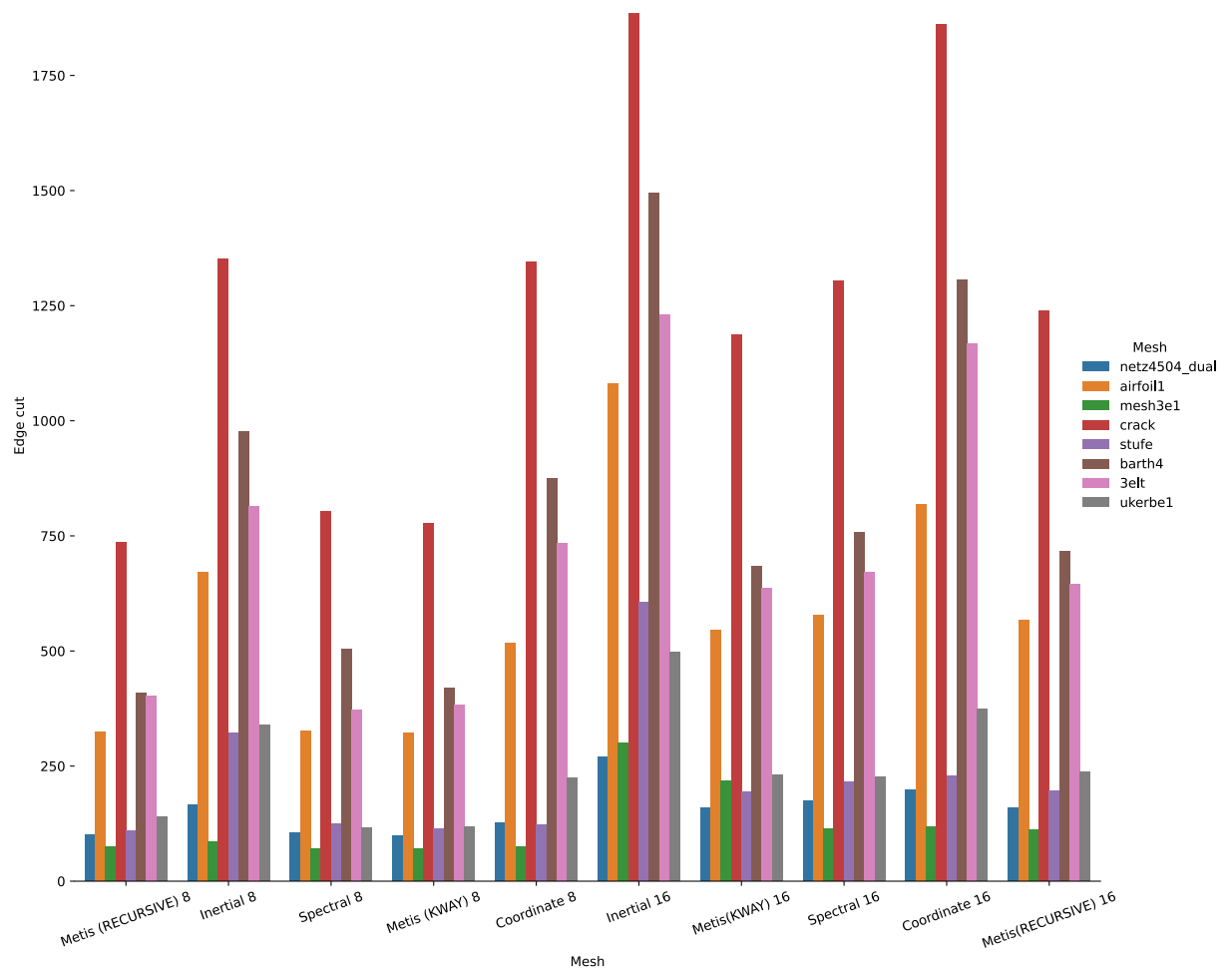


Figure 2:

3. HPC software frameworks [50 points]