

# Parallel Algorithm Selection

Jesse Ken Evans, Haniye Kashgarani, Lars Kotthoff

The background features a dark blue grid. A white line graph with circular markers is overlaid on the grid. The line starts at a low point, rises, falls, rises again, and then fluctuates with an overall upward trend towards the right side of the slide.

## What is **Algorithm Selection**

- **different performances**
- most **suitable** algorithm from an **algorithm portfolio**

### **Parallel** Algorithm selection

- One approach for improving instance-based algorithm selection
- It helps us to use most of our hardware resource

## What have we done?

### Some parallel tests

- With different number of parallel solvers
- On different nodes running on Teton cluster of uwyo



# RESULTS



Test set: {5,9,12,18,36,72,144}

Node: **KNL** (72 cores)

Solver: **Cadical**

There is a significant increase in runtime of parallel processes when number of parallel solvers becomes more than number of Node's core!

Reasons:

- Shared resources such as memory
- Cache collision

