

# bwRSE4HPC - Better Research Software in Baden-Württemberg

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## Our Mission

We provide *software development services* for researchers in Baden-Württemberg

- Dreamed of adding a feature, but no funding available?
- Dozens of PhD codes, but no coherent software?
- Going from your laptop to HPC, but don't know where to start?
- Spending ages for your program to finish?

*We can help!*

Projects from a few weeks up to 6 months are *free of charge* for all researchers based in Baden-Württemberg.

## Software Development Areas

### Performance Optimizations

- Algorithmic development
- Interfacing optimized libraries
- Generic Optimizations

### Usability

- Language bindings
- Improving user interface
- Enabling automation

### Sustainability

- Build system modernization
- Removing code debt

### Enabling HPC

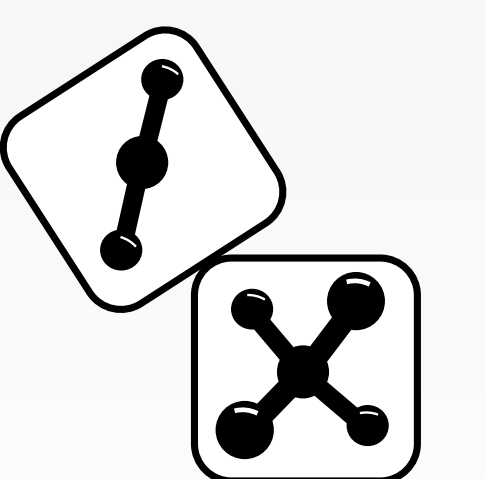
- Adding parallelism, shared and/or distributed memory
- Prototype development

## KIMMDY

*Molecular Dynamics*



- ☒ Simplified package install on HPC systems
- ☒ Improved GPU utilisation
- ☒ Add integration test coverage

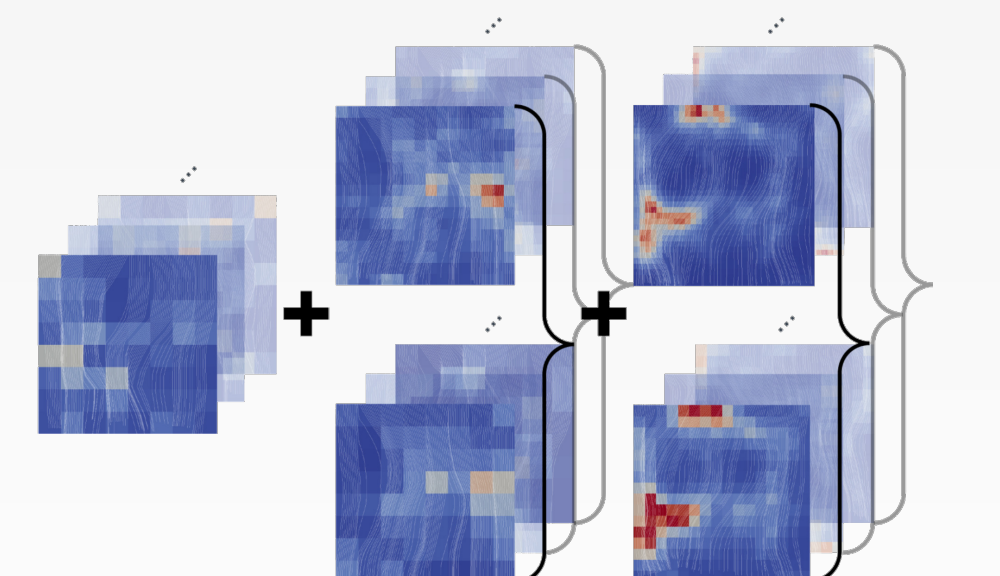


## M++ with Ginkgo

*Applied Mathematics*



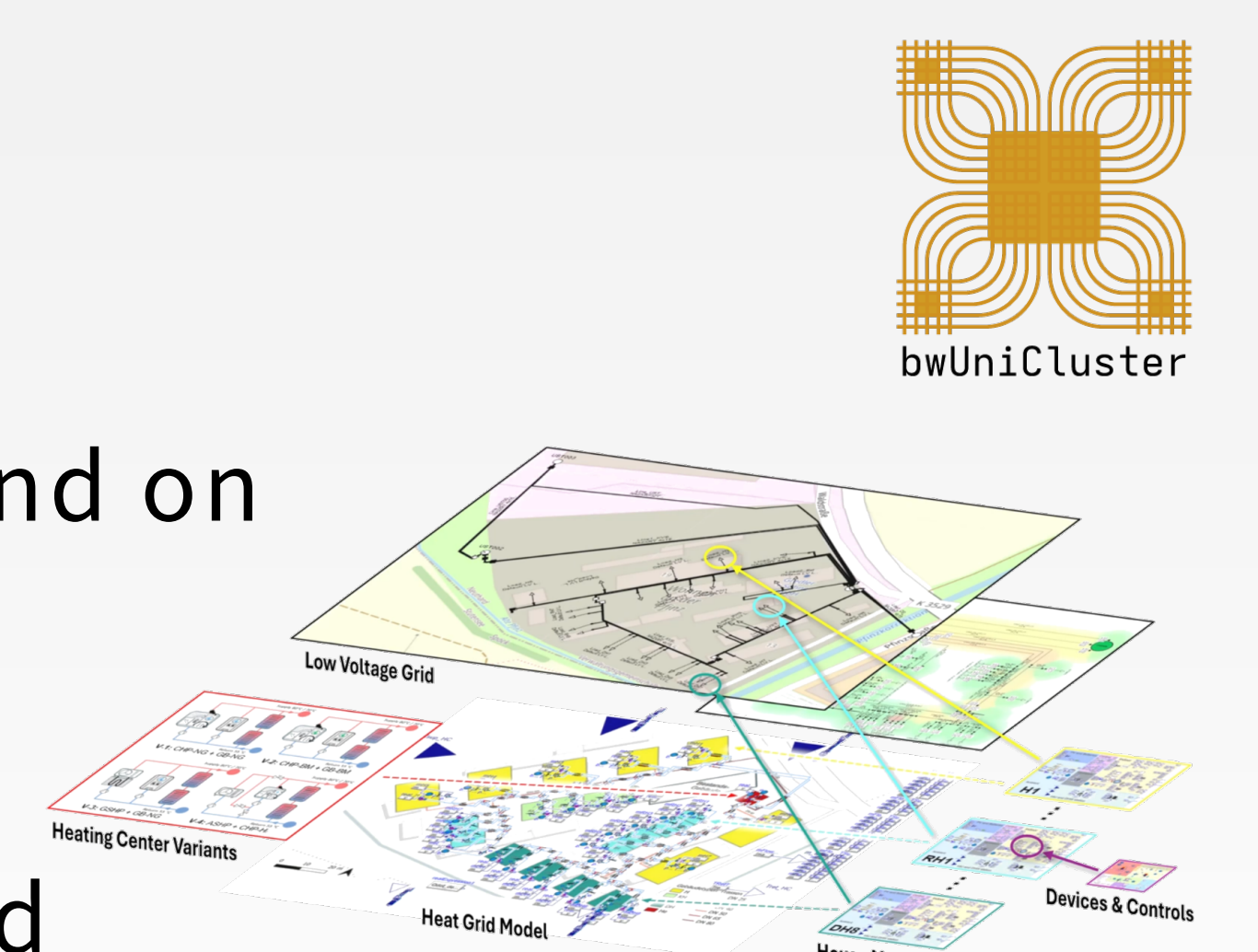
- ☒ Wrap Ginkgo into existing linear solver interface
- ☒ Run linear solver on single GPU
- ☐ MPI parallelize over multiple GPUs



## eCoSimHPC

*Energy Systems*

- ☐ Run with current backend on HPC cluster
- ☐ Add HPC optimized communication backend
- ☐ Scaling benchmarks on an HPC cluster



## Get in Touch

More information at  
<https://www.bwrse4hpc.de/>  
 Don't hesitate to contact us directly at [support@bwrse4hpc.de](mailto:support@bwrse4hpc.de)

