

Experiences with porting to Xeon Phi by CSC – IT Center for Science Ltd.

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What's unique about my tuning work

- **GPAW, Elmer, IFS**
- **Molecular dynamics, Multiphysics, Atmospheric**
- **Native, Symmetric MPI, MKL**
- **Intel Compilers and tools, Totalview debuggers, Internally developed coremap tool**

Performance

- **Gradual performance improvements**
- **Improvements have also been reflected on Intel Xeon CPU side**
- **<How much each of original host code and code with MIC was sped up (e.g. Xeon 1.3x, MIC 2.2x)>**
- **<List of optimizations that yielded perf improvements, how much each gave (order dependent), why I thought that'd help, and how generalizable I think such optimization is>**

Insights

- **<What I learned>**
- **<What I recommend and how I would have done it differently>**
- **<Which tools and optimizations were most useful and why?>**
- **<Biggest surprises>**
- **<Key remaining challenges>**
- **<Questions I'd like to raise>**