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

Olli-Pekka Lehto
Development Manager
CSC – IT Center for Science
Finland
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>