

targetDP: Abstraction layer for CUDA and CPU

- Alan Gray from Edinburgh gave a seminar on Friday on an abstraction layer they developed that allows targeting CUDA and CPUs.
- This is not endorsing or opposing targetDP - just to disseminate information.
- All papers seem to imply it is particularly for lattice based problems (complex fluid simulation, lattice QCD), but I saw nothing that should limit it to this domain.
- Basically set of macros and a C99 library. Sections of code are marked “thread level parallel” or “instruction level parallel”, plus commands for memory copies.
- Currently memory is copied even if target is CPU. He said this is better for debugging, and could be made a no-operation in a future version.
- Freely available (GPL I think?). Link was provided but I don't have the slides and a quick google before this meeting didn't find it.
- Arxiv: <http://arxiv.org/abs/1405.6162>