

Press release
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The PRACE Award winners 2012 announced

The PRACE Scientific Steering Committee (SSC) selected the winner of the PRACE Award in 2012. The Award was presented at the Opening Session of ISC'12 (International Supercomputing Conference) in Hamburg on **Monday, June 18 th, 2012**.

All papers that were submitted to ISC'12 Research Paper Sessions were reviewed by the PRACE Scientific Steering Committee. This year's PRACE Award goes to the paper "[A Fast & Scalable Low Dimensional Solver for Charged Particle Dynamics in Large Particle Accelerators](#)" signed by a group of authors: **Yves Ineichen (Paul Scherrer Institut, IBM Research – Zurich, and ETH Zürich), Andreas Adelmann (Paul Scherrer Institut), Costas Bekas (IBM Research – Zurich), Alessandro Curioni (IBM Research – Zurich), Peter Arbenz (ETH Zürich)**

This paper demonstrates how HPC can be used in real time to tune the operation of particle accelerators, which are invaluable tools for research in the basic and applied sciences, in fields such as materials science, chemistry, the biosciences, particle physics, nuclear physics and medicine. The design, commissioning, and operation of accelerator facilities is a non-trivial task, due to the large number of control parameters and the complex interplay of several conflicting design goals. The team from IBM Research, Paul Scherrer Institute and ETH Zürich achieved strong and weak scalability improvement on BlueGene/P of two orders of magnitude for the most heavily used component of the optimization framework, which computes the evolving shape of the bunches of particles in the beam. This enables thousands of such calculations to be performed in a matter of minutes, creating close to on-line optimization capability.

"This paper shows how HPC can make an impact, not just through huge calculations, but through sheer speed, by parallelizing a code so efficiently that it can be used to optimize the operation of a complex instrument like a particle accelerator in real time", says Prof. **Richard Kenway**, Chairman of the PRACE Scientific Steering Committee.

The PRACE award was presented during the ISC'12 Opening Session on Monday, June 18. The winner will receive sponsorship for participation in a training event or a conference relevant to petascale computing.

The results of the work will be presented during the Research Paper Session 2 on, **Tuesday, June 19, 2012 9:00 AM - 9:30 AM** in the Hall C2.2 in CCH Congress center Hamburg.

More information at:

- www.isc-events.com/isc12_ap/contributiondetails.php?t=contribution&o=1598&a=select&ra=eventdetails
- <http://www.isc-events.com/isc12/prace-award.html>

About PRACE: The Partnership for Advanced Computing in Europe (PRACE) is an international non-profit association with its seat in Brussels. The PRACE Research Infrastructure (RI) provides a persistent world-class High Performance Computing (HPC) service for scientists and researchers from academia and industry. The Implementation Phase of PRACE receives funding from the EU's Seventh Framework Programme (FP7/2007-2013) under grant agreements n° RI-261557 and n° RI-283493.

