The Beams and Applications Seminar Series

Parallel Computing and Beam Dynamics Simulations for RIA

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Bldg. 401, room 2100
Monday, October 25, 3:00 pm

Host: P. Ostroumov, PHY

In order to study beam halo formation and beam losses in the RIA driver linac we have performed large scale simulations using the recent parallel processor machine JAZZ of Argonne's Laboratory Computing Resource Center (LCRC). These simulations allowed us to compare the performances and limitations of two design options for the driver linac based on error tolerance and beam loss analysis. After introducing the problem and the tools, I'll discuss the necessity of parallel computing and present our simple approach in parallelizing the recently developed code TRACK and discuss some results. I'll also present a more elaborate approach for parallelization through the example of the code IMPACT and discuss the differences and advantages of the two approaches. The code IMPACT will be used to benchmark the code TRACK, so I'll briefly discuss the next steps in this collaborative effort between ANL, LANL, LBL and MSU.

For more information visit
http://www.aps.anl.gov/asd/physics/seminar.html

Visitors from off-site please contact Yuelin Li
(ylli@aps.anl.gov, 630-252-7863) to arrange for a gate pass.

This ANL seminar series is a CARA activity and focuses on the physics, technology and applications of particle and photon beams. It is sponsored jointly by the ASD Division, the AWA group of the HEP Division, and the ATLAS group of the PHY Division.