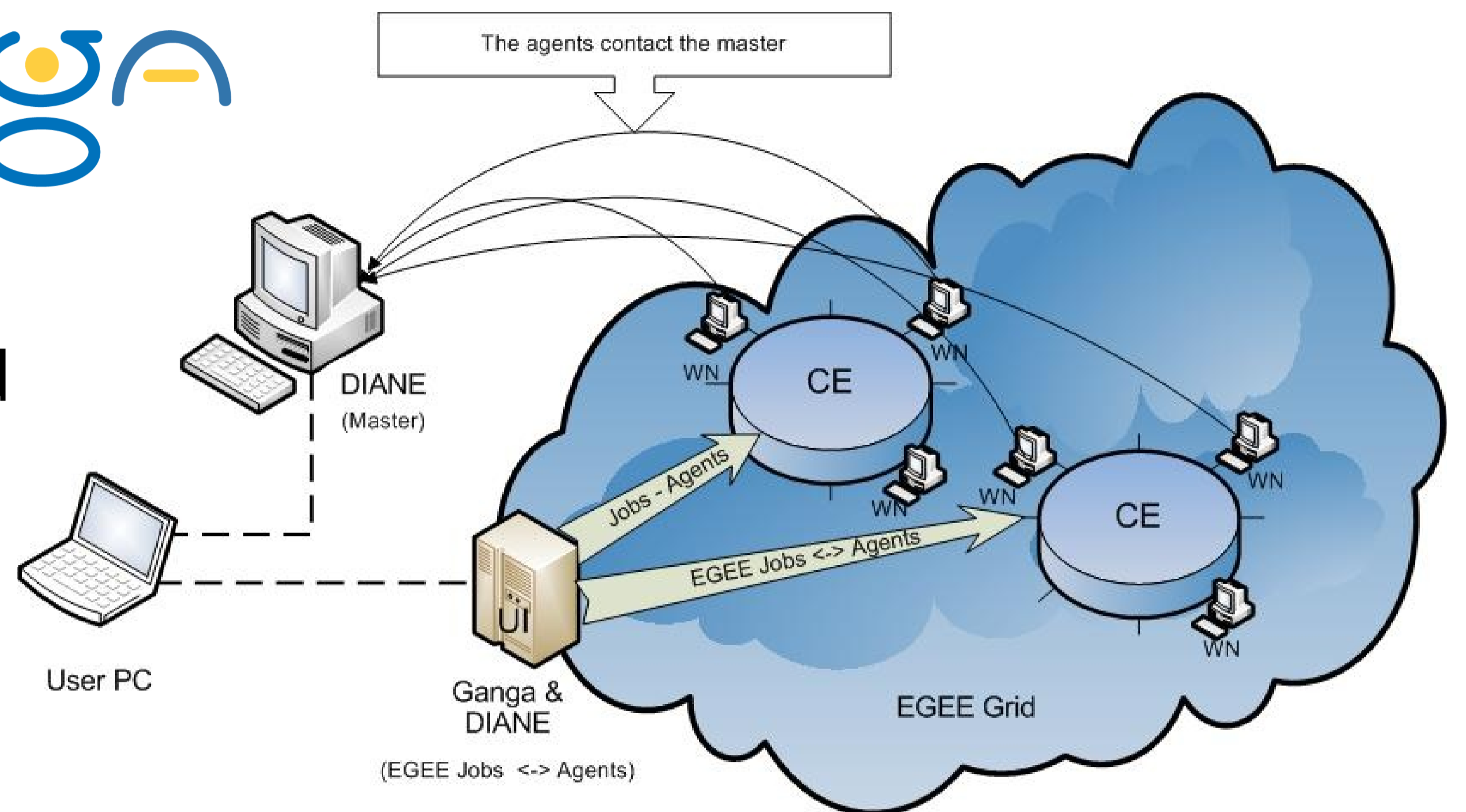


Ganga and **DIANE** are the tools which allow to deploy applications in the Grids or local computing infrastructures **easily**, **reliably** and **efficiently**.



Key features:

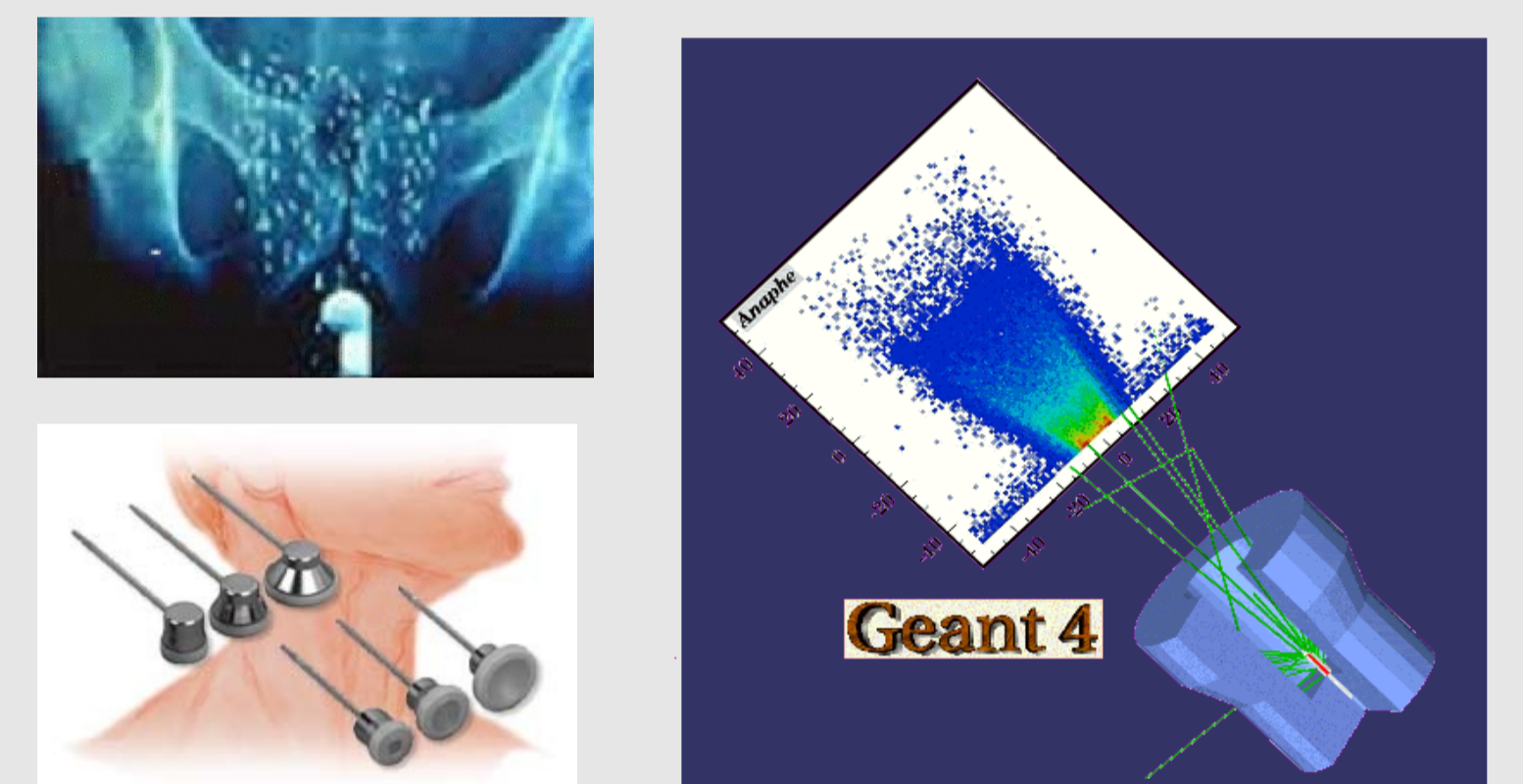
- Install in 5 minutes, no root access required
- Easy to use and well documented
- Supported by large scientific communities
- Application plugins for customization
- Flexible and configurable



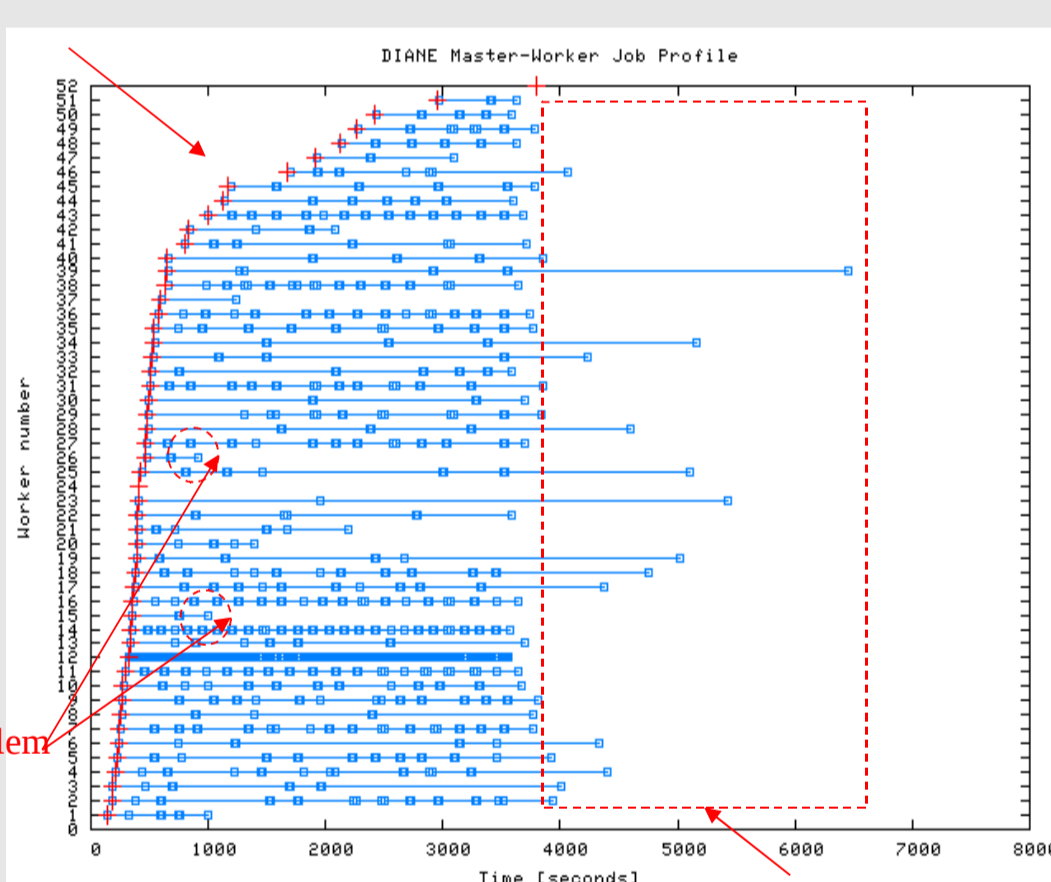
Drawing courtesy of ThIS collaboration

Interactive feedback: Monte Carlo simulation with Geant4

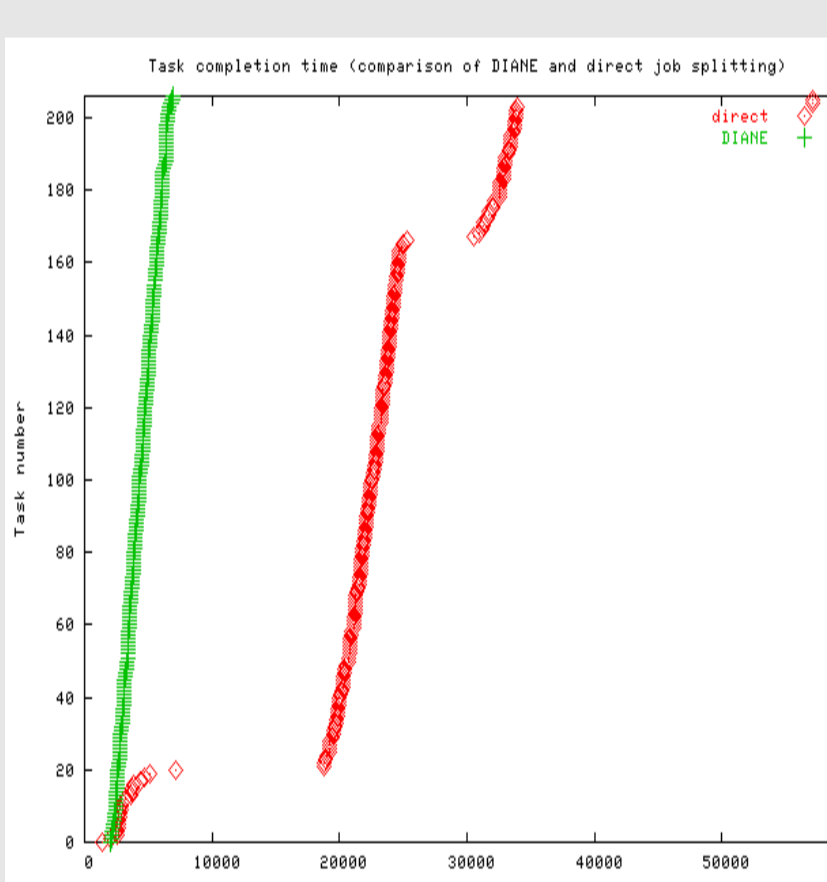
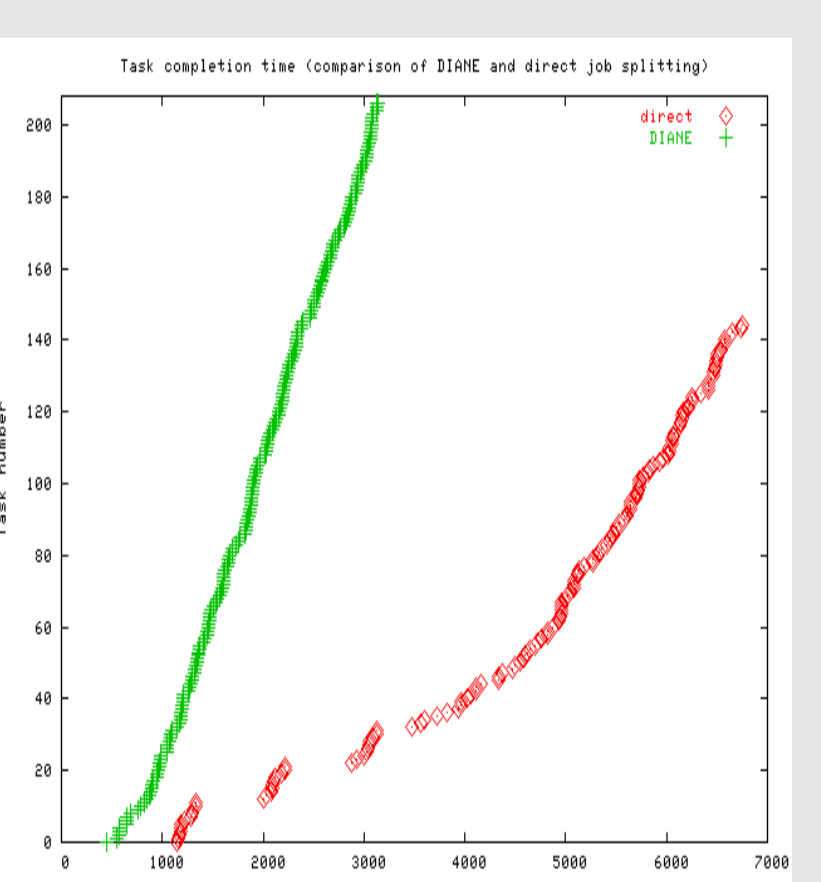
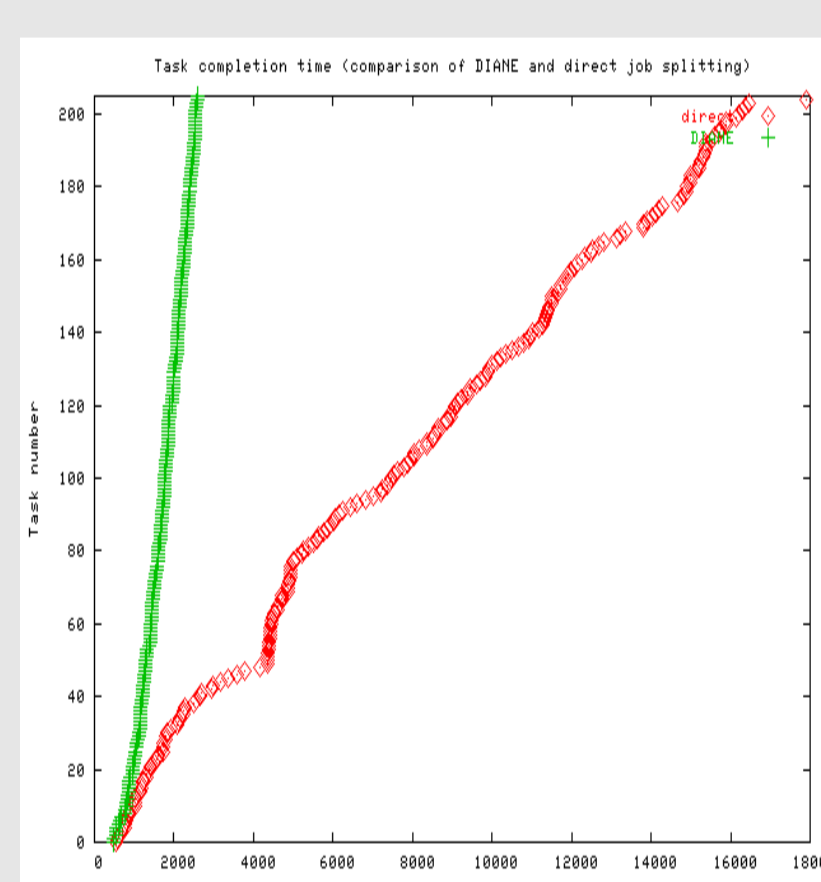
- simulation results are delivered interactively to the user
- the workload is automatically controlled by the system
- Brachytherapy is a cancer treatment by exposing tumors to radioactive sources
- Monte Carlo simulation is used to estimate effects of radioactive doses to optimize treatment planning
- Monte Carlo is very precise but also very computing intensive
- The simulation histograms of energy deposit for large number of events.
- Events are independent and are simulated in parallel.
- The resulting histograms are merged on-the-fly and presented to the user



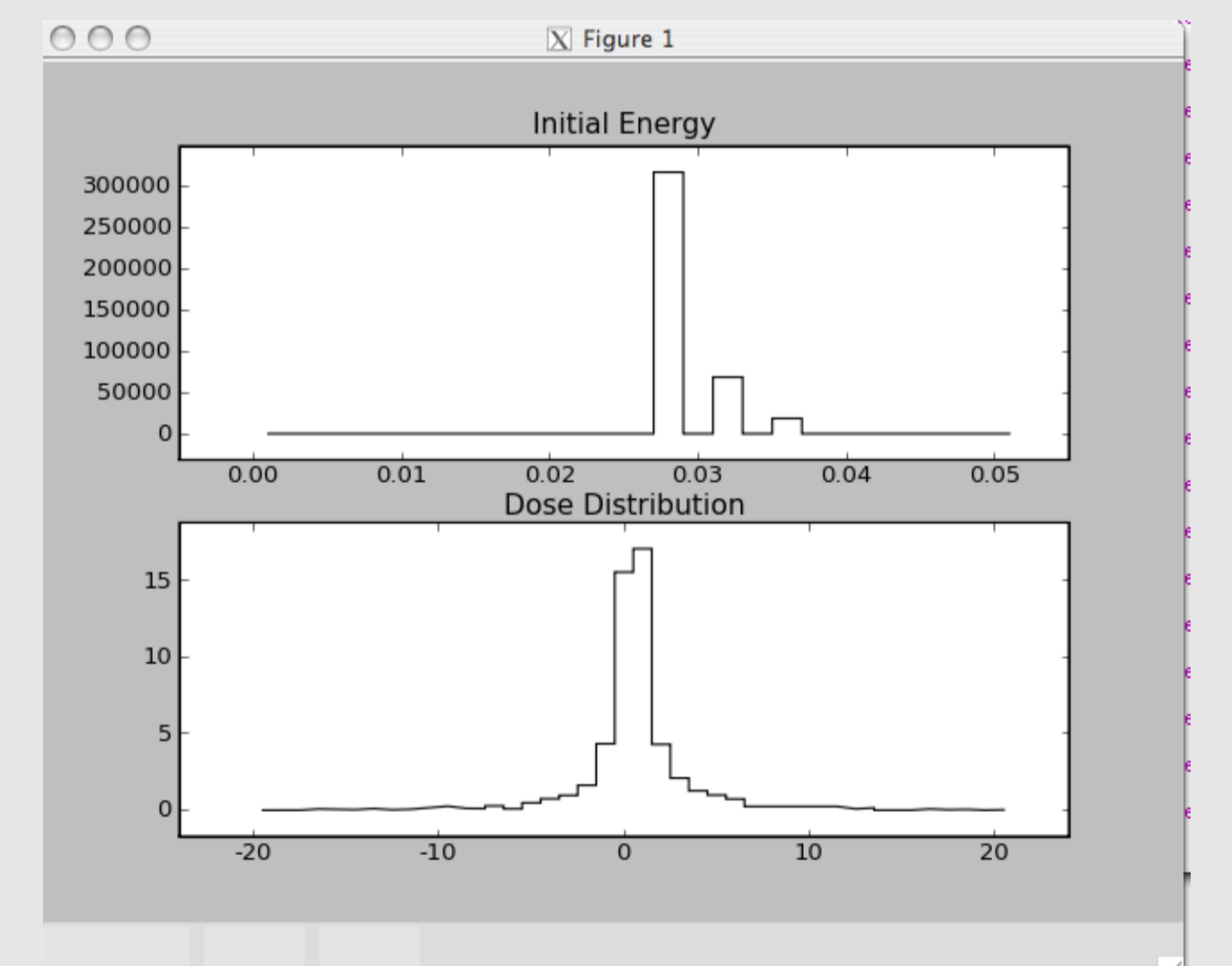
startup overhead (submission)



Dynamic workload balancing on the Grid



Simulation completion time: **DIANE/Ganga** vs **direct Grid submission**



Interactive merging of the simulation output during the execution of the job on the Grid

High-performance: telecommunications industry applications

- mission-critical support for ITU RRC06
- 200K short jobs executed in less than 3 hours
- dynamic load-balancing and scheduling
- new international agreement for digital broadcasting in 120 countries

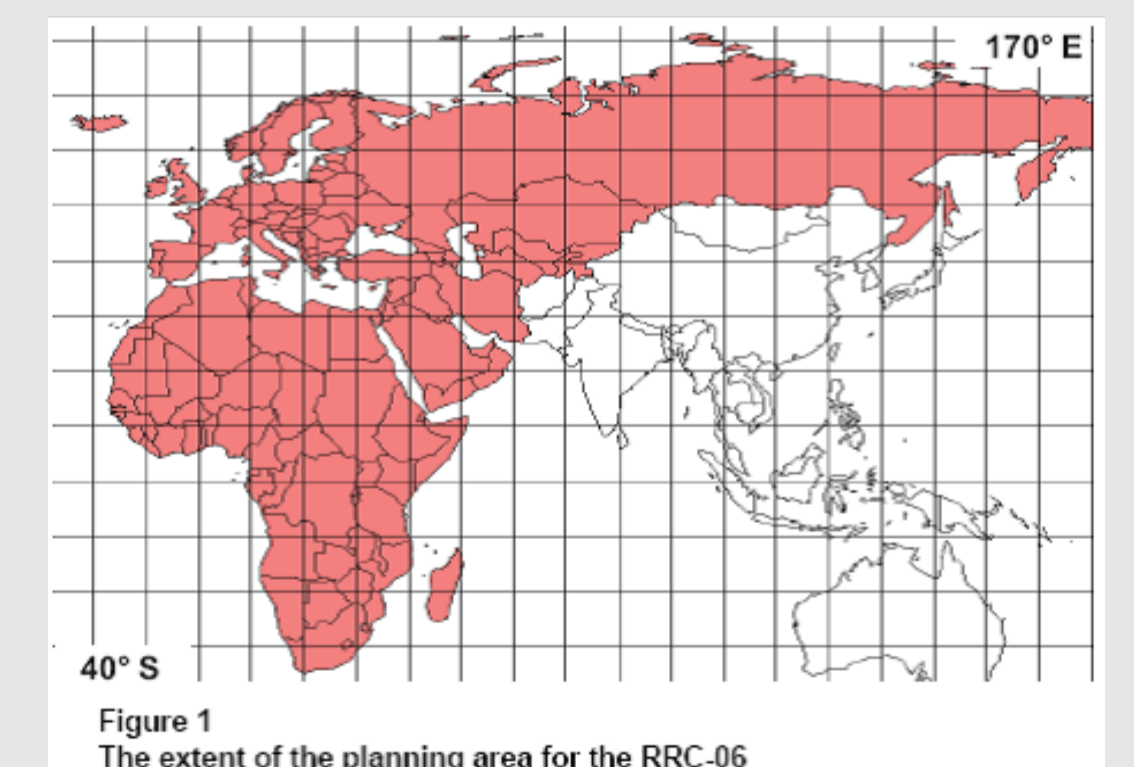


Figure 1 The extent of the planning area for the RRC-06

High-throughput: Lattice QCD simulation

- runs unattended for months
- operated by one user
- ~1000 running jobs at any time
- ~300 CPU-years, ~18 TB of data
- "searching for QCD critical point" (arXiv:0808.1096)

