LUNA computing needs

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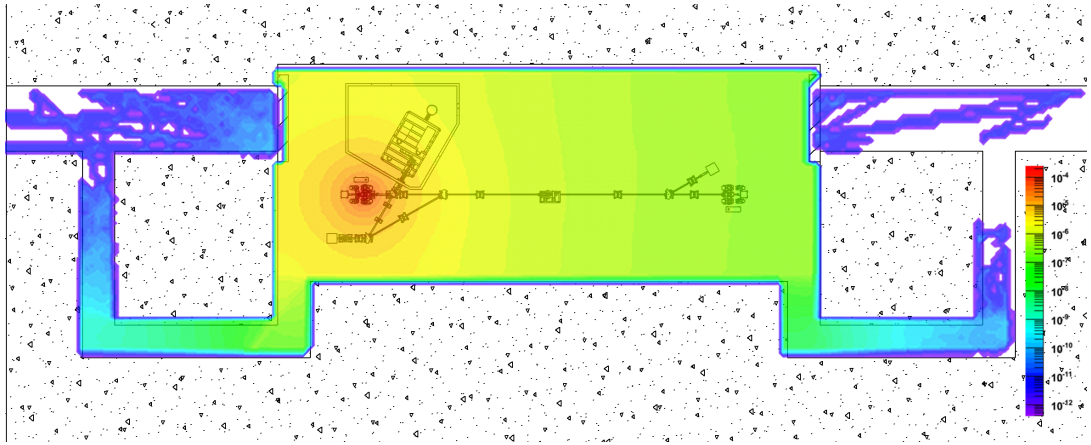
for the LUNA collaboration

- LUNA 400 is ongoing project financed by INFN through Commission 3
- Installed in 2000 and is continuously taking data
- Progetto premiale approved, foresee installation of new 3.5 MV accelerator and improved, more complex detector systems
- Wide variety of measurements, data +computing needs depend on current experiment
- Work groups from Italy, Scotland, Hungary, Germany (+collaboration with US group)

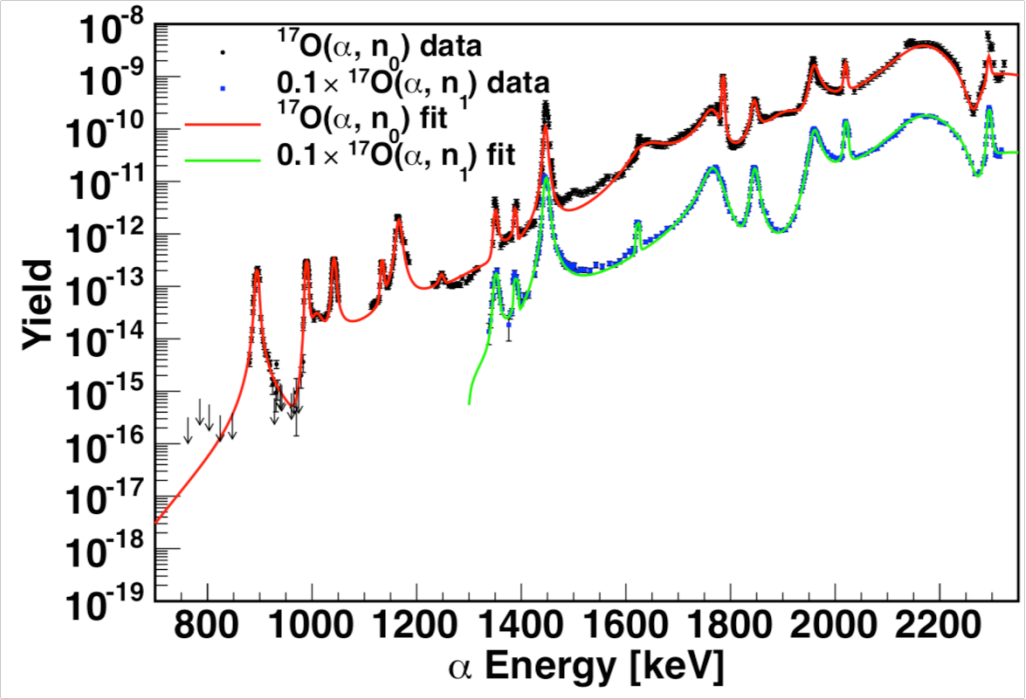
Processor power

- Various aspects: simulation / (online) analysis
- Simulation can require lots of CPU time
- Neutron flux simulations for LUNA-MV (CPU-months)
- Can be done anywhere after local testing and debugging



Analysis I

- Final analysis of data (e.g. *R* Matrix fit):
- Again CPU-intensive but outsourceable



Analysis II

- LUNA needs to perform preliminary on-line analysis of data while measuring
- Involves:
  - Fast conversion of raw data to useable format
  - In future preliminary pulse-shape analysis

Data storage

- During full production run (+ acquisition of pulse shapes) > 100 Gbyte/day
- Local storage necessary for on-line analysis
- Since its beginning, long-term data storage for every experiment conducted at LUNA was at LNGS
- Older data on outdated backup media -> require conversion for data preservation