EuroNuNet
Detector tasks

Detector WG coordinator: Roumen Tsenov

Goals that we thought we could reach (Feb. 2017)

- Software framework development, including format requirements for the neutrino beam files (Apr. 2017, Budimir Klicek);
- Flux driver (May 2017, Budimir Klicek);
- MEMPHYS simulation framework installation at the local cluster of the Physics Division of Lund University, and also Virtual Machine prepared (Mar. 2017, Nikos Vassilopoulos, Guy Barrant, Joakim Cederkall);
- Peculiarities of Cherenkov photons generation and propagation within GEANT4 framework – understanding and consequences (May 2017, Joakim Cederkall, Peter Christiansen, Rasmus);
- Full simulation chain for 1 kt cylindrical water Cherenkov Near detector (beam files, GENIE, *a la* MEMPHYS reconstruction) (Sept. 2017, Joakim Cederkall, Peter Christiansen, Rasmus, Aysel Topaksu);
- Full simulation chain for a fine grained fibre tracker as part of the Near detector, in front of the water tank (Sept. 2017, Mariyan Bogomilov, Galia Vankova, Roumen Tsenov);
- Reviving MEMPHYS simulation software and start working on simulating of the detector response to the ESSnuSB beam (Sept. 2017, Aysel Topaksu, Joakim Cederkall, Peter Christiansen)

Done so far (Jul. 2017)

•MEMPHYS simulation framework installed at the local Iridium cluster (CentOS) of the Physics Division of Lund University (Thanks to Guy Barrand!)

• Ubuntu OS Virtual Machine Mint 18.1 prepared (Thanks to Budimir!) but MEMPHYS code is not yet there.

Feasible to be done until end of Sept. 2017 ?

• Simulation chain for 1 kt cylindrical water Cherenkov Near detector (beam files, GENIE, *a la* MEMPHYS reconstruction, demonstration of a few events);

• Simulation chain for a fine grained fibre tracker as part of the Near detector, in front of the water tank, demonstration of a few events;

• Demonstration of a few events in the MEMPHYS far detector, situated in Garpenberg mine, i.e. 540 km away from ESS

What do you think?