

Status of simulation tasks

22-01-2024

Status of simulation tasks (and People)

- **CYGNO-04 internal background simulation**



- CYGNO-04 needs to be fully simulated in GEANT
- We also miss the simulation of the copper radioactivity-induced background of the screen (even in the re-scaled version)

- **Full simulation of Am photons at 59 keV** **(Pietro)**

Need to digitize and reconstruct G4 ntuples by Flaminia for a first comparison.
If statistics is not enough, we need to run a new simulation.

- **Finalize data-MC comparison of PMT for 55Fe** **(Rafael, Luan)**

Currently working on the impact of the glass transmission spectrum in the simulated waveforms.
Next relevant steps: finalize the iron comparison, and then start looking at other sources.

- **Improve data/MC agreement on 55Fe calibrations** **(Davide, Pietro)**

We know the behavior as a function of z is not stable over time. Studying RUN 4 calibration runs to understand how different gas filters and gas flows can affect the LY as a function of z .

- **Simulation of X-Y non-uniformities with new 55Fe map** **(Pietro)**

Need to test if we are able to reproduce iron resolution with the iron map by Davide, instead of the cosmic map of LNF.