

CYGNO simulations update

CYGNO simulation working group

23/05/25

CYGNO simulation updates

Resumed simulation meetings starting from last Monday 20/05/24: [link to the agenda](#)

We had 4 presentations:

- **CYGNO-04 external background simulation** (Melba): first results with 10^8 generated events but more statistics is needed. Investigating also “biasing” in Geant4 to improve calculation efficiency.
- **CYGNO-04 radioactivity of the copper shielding** (Zahoor): studied all the combinations of copper layers with different purities. The best option in terms of cost and performance seems to be: 2 layers (4 cm) of Schrieber copper inside + 3 layers (6 cm) of OPERA copper outside
- **Digitization cpp** (Stefano): started an effort to translate the python digitization code in cpp to speed up this step of the simulation. A repository is in the CYGNO github area.
- **PMT simulations** (Rafael): presented some data/MC comparisons for PMTs with ^{55}Fe scans. Trends are similar but still some room for improvement.