

# CYGNO simulations update

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CYGNO simulation working group

10/10/24

# CYGNO-04 simulations

- Cathode simulations of 2.5 mm thickness (9 kg copper):
  - recent ICP-MS measurements indicates very low level of U and Th (U → 2 ppb and Th → 7ppb)
  - re-evaluated expected background  $O(10^3)$  ev/yr, 1 order of magnitude less than previous estimation (from upper limits)
- Copper shielding simulation work in progress
  - inner layer made of the same clean copper, so we expect a lower background than previous estimation
- ICP-MS measurements @LNGS very sensitive
  - we should consider to measure other materials for which we have only upper limits on radioactivity from HPGe (es. PMMA)

# Technical meeting CAD design

We had a meeting last Tuesday 08/10 with Sandro, Cesidio and Antonio

- we reviewed together the geometry of the GEMs, field cage, cathode and found a few things to fix (coils of the FC, thickness of the GEMs)
- they agreed to produce a simplified CAD for simulation
  - remove as much as possible holes and feedthroughs from all the volumes
  - keep correct thickness, amount of materials, position of the various parts