



SC updates (report from the last meeting on 29/10/2024)



F. Petrucci



The University
Of
Sheffield.



European Research Council
Established by the European Commission

Round table with updates on critical items for the finalisation of the design of CYGNO-04.

Coordinatore Tecnico: Davide Farina appointed (as already discussed)

Hall-F works: (already had additional news from Davide F.)

MC simulations (Giulia+Davide):

- The simplified geometry is currently under implementation and will be ready soon.
- New measurements on the Cu radioactivity used to update the background calculations.
- We should use the mass spectrometer also to measure PMMA for which we only have upper limits.
- We need to contact the company and have some samples to analyse to have measurements on the same material that will be used.
- The next simulations will focus on the field cage that currently accounts for very high background.
- We would like to improve the measurements for the other options kapton-copper and pet-copper using larger samples, $O(0.5m^2)$.
- We should check if they are available and bring them to LNGS.
- The simulation of the background from the acrylic will follow right after, also because the design is still not finalised.

PMMA design:

- Source windows: there is a first proposal under evaluation for a movable source. Also, collimators and source type have to be discussed (and possibly some simulations performed).
- Optical windows: try to reduce reflections. Different options:
 - Could be placed very far so any reflection will be out of focus.
 - Using a “black” GEM (an oxide copper on one side if this does not affect GEM operations) is an interesting alternative to being explored.