

# The CYGNO experiment

*Thursday 18 July 2024 11:53 (17 minutes)*

CYGNO is developing a high-precision gaseous Time Projection Chamber to be installed at the Gran Sasso National Laboratories (LNGS) for directional studies of rare low energy events, as dark matter. The detector consists in a TPC filled with He:CF<sub>4</sub> gas mixture operating at atmospheric pressure with a triple GEM amplification stage. The gas scintillating properties allow the realization of an optical readout which comprises photomultiplier tubes and extremely low-noise granular sCMOS camera sensors. This technology provides a set of information on the recoil tracks, as released energy, 3D topology and position down to few keV of energy deposits, granting the advantages of a directional detector.

We will present the latest results on the underground operation at LNGS of a 50 l, 50 cm drift prototype focusing on the MonteCarlo-data comparison. In addition, we will show the design and features of the CYGNO demonstrator, a 0.4 m<sup>3</sup> detector whose installation is foreseen for 2025 at LNGS.

## Alternate track

### I read the instructions above

Yes

**Authors:** PETRUCCI, Fabrizio (INFN - Sezione Roma III); DHO , Giorgio; D'ASTOLFO, Melba

**Presenter:** D'ASTOLFO, Melba

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