

COSINUS - Progressing towards shedding light on the DAMA/LIBRA claim

Friday 31 March 2023 11:00 (15 minutes)

For a fully model-independent investigation of the nature of the DAMA/LIBRA signal, experiments which use the same material as DAMA/LIBRA are mandatory.

COSINUS will use crystals of NaI, however not operating them as mere scintillation detectors, but as so-called cryogenic scintillating calorimeters cooled to milli-Kelvin temperatures. COSINUS detectors provide a simultaneous and independent measurement of both the temperature signal and the scintillation light signal caused by a particle interaction. Since the amount of produced light depends on the particle type (light quenching), this detection technique yields identification of the type of interacting particle on an event-by-event basis.

In this talk we will show new results from the latest generation of COSINUS prototype detectors utilizing the so-called „remoTES“ readout concept. Furthermore we will present on the current status of the experimental setup installation presently ongoing at the Gran Sasso underground lab in Italy.

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Session Classification: SESSION 11: Direct Detection: status of crystalline WIMP detectors (CHAIR: Bernard Sadoulet - Berkeley)

Track Classification: Non-directional direct dark matter detection