



Contribution ID: 54

Type: **Talk**

Development of ZnWO_4 crystal scintillators for rare events search

Thursday, 26 August 2021 17:00 (30 minutes)

The ZnWO_4 crystal scintillators are promising detectors for low counting experiments thanks to the high level of radio-purity, and reasonably high optical and scintillation properties. Moreover, ZnWO_4 is an anisotropic scintillator which can offer a unique possibility to exploit the so-called directionality approach in order to investigate the presence of Dark Matter candidates that induce nuclear recoils. In addition to Dark Matter investigations, the ZnWO_4 scintillators can be used in the searches for other rare processes, as double beta processes in zinc (^{64}Zn , ^{70}Zn) and tungsten (^{180}W , ^{186}W) nuclides, and in the investigations of the alpha decay of ^{180}W . The goal of the ADAMO project is the development of ZnWO_4 crystal scintillator with high radiopurity, the optimization of the detector performance and the study of its anisotropic response to nuclear recoils. In this talk, the recent results obtained by the ADAMO project will be reviewed.

Is this abstract from experiment?

Yes

Name of experiment and experimental site

DAMA - <http://people.roma2.infn.it/~dama>

Is the speaker for that presentation defined?

Yes

Details

Name: Fabio Cappella

Title: Researcher

Institution name: INFN

Country: Italy

Webpage of institution: <https://home.infn.it/en/>

Internet talk

Yes

Primary authors: BELLI, Pierluigi (INFN - Roma Tor Vergata); BERNABEI, Rita (INFN); BOROVLEV, Yu.A. (Nikolaev Institute of Inorganic Chemistry); CAPPELLA, Fabio (INFN); CARACCILOLO, Vincenzo (INFN - Na-

tional Institute for Nuclear Physics); CERULLI, Riccardo (INFN - National Institute for Nuclear Physics); CHERUBINI, Nadia (ENEA); DANEVICH, Fedor (Research of NASU, 03028 Kyiv, Ukraine); INCICCHITTI, Antonella (INFN); KASPEROVYCH, D.V. (Research of NASU, 03028 Kyiv, Ukraine); MERLO, Vittorio (INFN, Sezione di Roma "Tor Vergata", I-00133 Rome, Italy); PICCINELLI, Ermanno (ENEA); POLISCHUK, Oksana (Research of NASU, 03028 Kyiv, Ukraine); SHLEGEL, V.N. (Nikolaev Institute of Inorganic Chemistry); TKACHEV, D.S. (Nikolaev Institute of Inorganic Chemistry); TKACHEV, S.V. (Nikolaev Institute of Inorganic Chemistry); TRETYAK, Vladimir (Research of NASU, 03028 Kyiv, Ukraine); ZHDANKOV, V.N. (CML Ltd, 630090 Novosibirsk, Russia)

Presenter: CAPPELLA, Fabio (INFN)

Session Classification: A High Energy Particle Physics