



Contribution ID: 176

Type: Poster

P2.33: DEVELOPMENT OF A SMALL- SIZE SCINTILLATOR-BASED NEUTRON GAMMA RAY SPECTROMETER FOR TERRESTRIAL AND SPACE APPLICATIONS

Wednesday, June 28, 2023 5:13 PM (1 minute)

We present the development of a neutron and gamma ray spectrometer for possible use in terrestrial and planetary science. The spectrometer module is called the Cosmogenic Neutron Detector (CosmoNeD) and is based on a monolithic scintillator with a silicon photomultiplier (SiPM) array and an integrated readout electronics. The prototype is under development and evaluation for small neutron spectrometers for terrestrial and space applications and will detect neutrons with energies of 0.025 eV –1 MeV with energy resolution of 4% at 662 keV (Cs) with the capability of distinguishing gamma-rays in the same range. It has the objective to measure the abundance of hydrogen bearing compounds and some rock-forming elements in the soil for moisture measurements and planetary geology studies. The preliminary results regarding its performance with various gamma-ray sources are presented here.

Author: ÖLÇEK, Deniz (CENSSS, IDEAS)

Co-authors: FAGERLAND HAAVIK, Andreas (IDEAS); KOHFELDT, Anja (CENSSS, IDEAS); GEORGHE, Codin (IDEAS); MEIER, Dirk (IDEAS); MAEHLUM, Gunnar (IDEAS); CHOE, Jusong Paul (Inventas); SØDAL GJENNESTAD, Magne (IDEAS)

Presenter: ÖLÇEK, Deniz (CENSSS, IDEAS)

Session Classification: Poster (incl. coffee)