

MURAVES muon telescope: a low power consuming muon tracker for muon radiography applications

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Muon Radiography is a technique based on the measurement of the absorption degree of cosmic ray muons as they pass through rocks to investigate the interior of large scale bodies, such as pyramids, volcanoes, little hills and others.

The MURAVES project aims to optimize the knowledge of the density distribution along the body of the Mt. Vesuvius, an active volcano near Naples in Italy, providing a useful information that can help, in addition to the standard gravimetric measurements, to understand its past and future activity.

The MURAVES apparatus is a modular, robust and low power consumption muon hodoscope consisting in an array of three identical muon trackers each of one square meter sensitive area. Each tracker consists of four XY stations made of plastic scintillator bars optically coupled with SiPMs. The hodoscope has been installed on the flank of the volcano and up-to-now a four-months net statistics has been collected.

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Primary author: D'ERRICO, Mariaelena (INFN)

Co-authors: Dr BROSS, Alan D; PLA-DALMAU, Anna; Dr CAPUTO, Antonio; VERTECHI, Enrico; Prof. AMBROSINO, Fabio; Dr GIUDICEPIETRO, Flora; MACEDONIO, Giovanni; SCARPATO, Giovanni; Prof. SARACINO, Giulio; PASSEGGIO, Giuseppe; BACCANI, Guglielmo; BONECHI, Lorenzo; VILIANI, Lorenzo; Dr CIMMINO, Luigi; BONGI, Massimo; ORAZI, Massimo; MORI, Nicola; STROLIN, Paolo; Dr NOLI, Pasquale; Prof. D'ALESSANDRO, Raffaello; CIARANFI, Roberto; PELUSO, Rosario; GONZI, Sandro; MASONE, Vincenzo; CIULLI, Vitaliano

Presenter: D'ERRICO, Mariaelena (INFN)

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