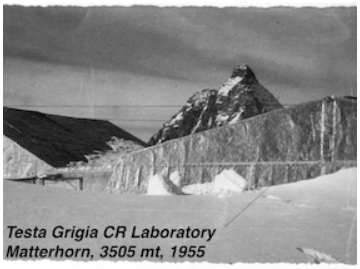

Contribution ID: **151** Type: **poster**

A Large Modular Cosmic-Ray Detector at the Testa Grigia Research Station

Tuesday, 6 September 2016 16:30 (1h 45m)

Cosmic ray detectors with helium counters were developed over the years at the S.V.I.R.CO: Observatory and Terrestrial Physics Laboratory (Rome, National Institute for Astrophysics). Preliminary details of such kind of detectors were reported by Storini and Signoretti, 2009 [Adv. Space Res. 44, 1221-1231] and Signoretti and Storini, 2011 [Astrophys. Space Sci. Trans. 7, 11-14]. After several performance tests performed at the S.V.I.R.CO. Observatory (e.g. Signoretti et al., 2013, IOP –Journal of Physics: Conf. Series 409, doi: 10.1088/1742-6596/409/1/012045) a large modular detector was moved to Testa Grigia Research Station (Italy, 45°56'N –7°42'E, 3480 m a.s.l.). In this work the obtained data are discussed considering the contemporary measurements performed not only at Rome (Italy, 41.86° N –12.47° E, a.s.l.) but also at Jungfraujoch (Switzerland, 46.55° N –7.98° E, 3475 m a.s.l.). Results confirm that the modular neutron detector is suitable for measurements sites with high particle counting rates, such as mountain or polar areas. This is particularly true because the weight of the heaviest element of the detector is lower than 23 Kg. Hence, only one operator is required for transporting and assembling the whole detector, even in its biggest arrangement (about 800 Kg, including 23 modules with a large helium counter [5.08 cm in diameter, 191 cm long]).

Summary

M. Laurenza, M. Storini, F. Signoretti, A. Zanini, P. Diego, S. Massetti, A.Liberatore, J. C. Terrazas, A.Esposito, M.Caresana

Primary author: Dr ZANINI, Alba (INFN Sezione di Torino)

Presenter: Dr ZANINI, Alba (INFN Sezione di Torino)

Session Classification: Poster