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First results on UHE Neutrinos from the NuMoon experiment

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Abstract content

When high-energy cosmic rays impinge on a dense dielectric medium, radio waves are produced through the Askaryan effect. At wavelengths comparable to the typical longitudinal size of showers produced by Ultra-High Energy cosmic rays or neutrinos, radio signals are an extremely efficient way to detect these particles [1]. These can be detected using the Westerbork Synthesis Radio Telescope (WSRT) which consists of fourteen 25m parabolic dishes. The low frequency band which concerns us here covers 115-170MHz. In tied-array mode the system noise at low frequencies is F_n=600Jy. To observe radio bursts of short duration, the new pulsar backend (PuMa II) is used. It provides dual-polarization baseband sampling of eight 20MHz bands. In the used configuration, four frequency bands will observe the same part of the moon with the remaining four a different section.
A first analysis of the present 100 hour observations at the WSRT will be presented.
O.˜Scholten etal, Astropart. Phys. 26(2006)219.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 4 (HE part 1), pages 275-278

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