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Underwater 4-channel Digital Device Intended to Detect Acoustic Signals

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Abstract content

The report describes a 4-channel digital device which can be regarded as a prototype elementary unit for future underwater acoustic neutrino telescopes. Signals from the hydrophones, arranged in a pyramid-like geometry with 144 cm spacing between the hydrophones, are amplified and processed by a 16-bit ADC card with a frequency up to 200 kHz. There are three regimes of operation of the instrument: a) an autonomous analysis of acoustic background statistics; b) online search for short acoustic pulses of definite shape, which can be interpreted as signals from distant quasi-local sources; c) transmission of a sample of data from all hydrophones to a shore computer centre after a trigger signal from the Baikal Neutrino Telescope NT200+ has been received. In April 2006, the device was installed at a depth 100 m on a hydrophysical mooring of NT200+ for long-term measurement. The data are presented and discussed.

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

Baikal Collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1561-1564

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