ID de Contribution: **39** Type: **oral presentation**

R&D studies for the development of a compact transmitter able to mimic the acoustic signature of a UHE neutrino interaction

vendredi 2 juillet 2010 11:20 (20 minutes)

Calibration of acoustic neutrino telescopes with neutrino-like signals is an essential aspect to evaluate the feasibility of the technique and to know the efficiency of the detectors. However, it is not straightforward to have acoustic transmitters that, on one hand, are able to mimic the signature of a UHE neutrino interaction, that is, a bipolar acoustic pulse with the 'pancake'directivity, and, on the other hand, fulfill practical issues such as ease of deployment and operation. This is a non-trivial problem since it requires directive transducer with cylindrical symmetry for a broadband frequency range. Classical solutions using linear arrays of acoustic transducers result in long arrays with many elements, which increase the cost and the complexity for deployment and operation. In this paper we present the extension of our previous R&D studies using the parametric acoustic source technique by dealing with the cylindrical symmetry, and demonstrating that it is possible to use this technique for having a compact solution that could be much more easily included in neutrino telescope infrastructures or used in specific sea campaigns for calibration.

Auteur principal: Dr ARDID, Miguel (IGIC- Universitat Politècnica de València)

Co-auteurs: CAMARENA, Francisco (IGIC- Universitat Politècnica de València); LAROSA, Giuseppina (IGIC- Universitat Politècnica de València); MARTÍNEZ-MORA, Juan A. (IGIC- Universitat Politècnica de València); BOU--CABO, Manuel (IGIC- Universitat Politècnica de València); ADRIÁN, Silvia (IGIC- Universitat Politècnica de València); ESPINOSA, Víctor (IGIC- Universitat Politècnica de València)

Orateur: BOU-CABO, Manuel (IGIC- Universitat Politècnica de València)

Classification de Session: Neutrino detection in water and salt (acoustic and radio)