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## **Autonomous radio-detection of EAS with the TIANSHAN Radio Experiment for Neutrino Detection**

*mardi 29 juin 2010 17:50 (30 minutes)*

The TIANSHAN Radio Experiment for Neutrino Detection (TREND) is a collaboration initiated in 2008 between the Chinese Academy of Science and the French IN2P3. This stand-alone antenna array aims at performing the radio-detection of extensive air shower (EAS) created by high energy neutrinos ( $>10^{16.5}$  eV).

The TREND experiment is deployed on the site of 21CMA, a giant radio-telescope built in the TianShan mountains (China) for the study of the Epoch of Reionization. TREND is using a large part of the 21CMA equipment and facilities.

In 2009, a prototype of 6 antennas was set-up in order to test self-triggering radio-detection and rejection of background events induced by local radio sources. Data were successfully acquired for several weeks. In January 2010, the TREND array was extended to 15 antennas and is presently in continuous data acquisition. A reduced particle detector array (3 scintillators) was also deployed in order to perform an off-line validation of the EAS candidates selection.

Results obtained with the 2009 prototype array, as well as preliminary analysis from the present configuration (including the first coincidences observed between the ground and radio array) will be presented.

Prospects for neutrino detection with the TREND experiment will also be discussed.

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**Classification de Session:** From radioastronomy to high energy particles