ÖAW
Austrian Academy of Sciences

INVITATION

HEPHY-SMI seminar on fundamental interactions and symmetries

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A Multi-purpose Cosmic Ray Experiment: The LHAASO Project

ABSTRACT:

In 21st century, one of the fundamental scientific problems is the origin of the cosmic rays which were discovered 100 years ago by Austrian physicist Victor Hess. One of the successful approaches is the VHE gamma ray astronomy that was started with the discovery of the Crab Nebula as a source of the gamma rays above 1 TeV at 1989. More than 130 VHE gamma ray sources are discovered, mainly by using the pointing Cherenkov telescopes such as HESS, MAGIC and VERITAS. To keep the momentum of the discovery power, a full sky survey with wide field of view and full duty cycle is necessary. Struggling on developing a right survey technology, the Chinese group together with its Italian and Japanese collaborators has successfully carried out two experiments, AS and ARGO-YBJ in last 20 years and has proposed the LHAASO project now. In this presentation, the scientific achievements of ARGO-YBJ will be summarized as an indication of what will be possibly achieved by LHAASO that is a factor of 30 more sensitive at low energies and 300 more sensitive at high energies. Simultaneously, LHAASO will significantly boost in performance of cosmic ray measurements in the energy region of „knees". The scientific prospects, detector performance and prototyping status will be reported as well.

DATE:

Thursday, 20.12.2012 - 17:00 s.t.

VENUE:

Institute for High Energy Physics
1050 Wien, Nikolsdorfer Gasse 18
Library, 1st Floor

http://www.smi.oeaw.ac.at/groups/hephysmiseminar/

Stefan-Meyer-Institut für subatomare Physik

HEPHY Institut für Hochenergiephysik