

T 75: Eingeladene Vorträge VI

Zeit: Donnerstag 14:00–15:30

Raum: H03

Eingeladener Vortrag T 75.1 Do 14:00 H03
AugerPrime: Pushing the Research Frontier of Ultra-High Energy Cosmic Rays — ●DARKO VEBERIC — Karlsruhe Institute of Technology (KIT), Germany — for The Pierre Auger Collaboration

Taking data for more than 15 years and delivering many interesting results, the Pierre Auger Observatory is undergoing a major upgrade. The 1660 water-Cherenkov detectors, composing the 3000 km² of the surface array, will be instrumented with additional scintillators, radio-detection units, and new faster acquisition electronics, while modifying the fluorescence detector to achieve larger duty cycle. I will present the main features of the design, our (already ongoing) deployment plans, impact of the additional event information on identification of primary cosmic rays, and discuss the goals and potential capabilities of the up-graded Observatory.

Eingeladener Vortrag T 75.2 Do 14:30 H03
Very-high-energy gamma-ray astronomy with the VERITAS observatory — ●ELISA PÜSCHEL — Deutsches Elektronen-Synchrotron (DESY), Platanenallee 6, D-15738 Zeuthen, Germany

Over the past several decades, very-high-energy gamma rays have proved to be an excellent tool for studying the non-thermal universe, as well as a probe of cosmology and fundamental physics. Recent results will be presented from the VERITAS gamma-ray observatory, an imaging atmospheric-Cherenkov telescope array located in southern

Arizona. VERITAS is sensitive to gamma rays from ~ 85 GeV to several tens of TeV, and has a broad observing program targeting galactic and extragalactic astronomy, multi-messenger and transient observations, and dark matter searches.

Eingeladener Vortrag T 75.3 Do 15:00 H03
Neutrinos from Blazars - what we learned from the TXS0506+056 observations — ●ANATOLI FEDYNITCH^{1,2}, SHAN GAO¹, WALTER WINTER¹, and MARTIN POHL^{1,3} — ¹DESY, Platanenallee 6, 15738 Zeuthen, Germany — ²Dept. of Physics, University of Alberta, Edmonton, Alberta, Canada T6G 2E1 — ³Institute of Physics and Astronomy, University of Potsdam, 14476 Potsdam, Germany

Blazars such as TXS0506+056 are collimated relativistic outflows from active galactic nuclei and among the brightest persistent radiation sources in the universe. The recent detection with the IceCube Observatory of a very-high-energy neutrino from TXS0506+056 in coincidence with a multi-wavelength flare supports the hypothesis that blazars accelerate cosmic rays beyond PeV energies, challenging conventional theoretical models. At the same time, the identification of a neutrino burst from the same source in archival IceCube data challenges most of the existing models and raises concerns about our theoretical understanding of these objects. In this talk I will highlight the relevant blazar models in the context of multi-messenger emission and highlight how the observational cornerstones of the TXS0506+056 discovery constrain their viability and generalization.