



The **Karlsruhe School of Elementary Particle and Astroparticle Physics: Science and Technology (KSETA)**, the Graduate School of the KIT-Centre for Elementary Particle and Astroparticle Physics (KCETA)

has opened a call for **Ph.D. positions** (doctoral fellows):

For application see at <http://kseta.kit.edu> (next deadline 1 Oct 2014)

One possible topic within the call is:

Radio Measurements of Cosmic Rays with Tunka-Rex

Tunka-Rex (<http://www.ikp.kit.edu/tunka-rex/>) is the radio extension of the Tunka observatory for cosmic rays in Siberia, close to Lake Baikal. The observatory measures air-shower cascades of secondary particles in the transition region from galactic to extra-galactic cosmic rays, i.e., cosmic rays of energies up-to 10^{18} eV. The main objective of Tunka is to determine the energy spectrum and the mass composition of these cosmic rays more accurately than before to shed light on their yet unknown origin.



Tunka-Rex currently consists of 25 antennas measuring the radio emission emitted by the air showers. These antennas are triggered by the Tunka air-Cherenkov array and, thus, operate only during nights. 20 additional antennas will be deployed in 2014 which are triggered by scintillator detectors measuring the secondary particles and capable to operate 24 hours per day.

The candidate is supposed to work on the analysis of the radio data, in particular those recorded with the newly deployed antennas. Existing analysis techniques have to be optimized aiming at an increased precision for the combined analysis of radio, Cherenkov, and particle detectors.

Qualification:

Candidates should hold a qualifying degree in physics and should have a specialization in astroparticle physics, astrophysics and/or elementary particle physics. Skills in Linux and C++ are recommended, skills in hardware and radio electronics would be assets. While Russian is of advantage, fluent English is mandatory. It is expected that candidates will present and discuss their results at international conferences and workshops as well as significantly contribute in publishing the results.

Application / Contact:

For application to this topic please mention Dr. Andreas Haungs (andreas.haungs@kit.edu) as prioritized PI. For technical questions regarding this topic please contact Dr. Frank Schröder (frank.schroeder@kit.edu), Institut für Kernphysik, Karlsruhe Institute of Technology.