ANISOTROPY STUDIES OF ULTRA-HIGH ENERGY COSMIC RAYS AS OBSERVED BY HIRES

HiRes Collaboration

Although the existence of cosmic rays with energies extending to 320 EeV has been confirmed , their origin remains one of the most important questions in particle astrophysics research today. The High-Resolution Fly's Eye (HiRes) is the largest aperture detector currently collecting data from ultra-high energy cosmic ray events. We present for the first time anisotropy studies from monocular and stereo data collected by HiRes. We consider topical candidate sources including the supergalactic plane , the Virgo cluster of galaxies , Cygnus X-3 and the vicinity of the AGASA triplet. We also present the results of searches for density fluctuations in the absence of a priori candidate sources, and for the existence of harmonics in the full-sky event distribution.