

Searches for anisotropies of cosmic rays at the Pierre Auger Observatory

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We report on the analysis of the distribution of the arrival directions of ultra high energy cosmic rays detected at the Pierre Auger Observatory. From 2.10^{17} eV to 3.10^{19} eV, we present the results of searches for first harmonic modulations in the right-ascension distribution of cosmic rays and discuss the obtained upper limits which constitute the most stringent bounds at present above 2.10^{17} eV. At the highest energies, the observation of the flux steepening is consistent with the shortening of the horizon of ultra high energy cosmic rays and leads to the possibility of “cosmic ray astronomy”. Thus, we present the analyses searching for correlation of cosmic rays with nearby extragalactic astrophysical objects.

Auteur principal: LYBERIS, Haris, for the Pierre Auger Collaboration (Institut de Physique Nucléaire d'Orsay, Università degli Studi di Torino, Université Paris VII Denis Diderot)

Orateur: LYBERIS, Haris, for the Pierre Auger Collaboration (Institut de Physique Nucléaire d'Orsay, Università degli Studi di Torino, Université Paris VII Denis Diderot)

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