APR18-2018-000452

Abstract for an Invited Paper
for the APR18 Meeting of
the American Physical Society

New results from ultra-high energy cosmic ray physics

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Ultra-high energy cosmic rays (UHECRs) are the most energetic particles observed in nature and encompass some of the greatest puzzles of modern physics. Since their first observation in the 1960s, several experiments have been performed in order to enlarge the statistics and improve the quality of their detection. The study of UHECRs contributes to a better understanding of the Universe regarding the identity of astrophysical sources and the mechanisms of production, acceleration and propagation in the interstellar environment, but also the study of fundamental physics at energies that cannot be achieved at today's accelerators. In this talk, I will present the most recent measurements of the energy spectrum and composition observables of cosmic rays with the highest energies and the searches for anisotropies in the distribution of their arrival directions. Special attention will be given to the first observation of a large scale anisotropy signal recently reported by the Pierre Auger Collaboration. I will discuss the present scenario and some of the experimental efforts for the upcoming years towards an understanding of the nature and origin of the UHECRs.