

Vulcano Workshop 2022 - Frontier Objects in Astrophysics and Particle Physics



Contribution ID: 9

Type: **Talk**

Recent results on cosmic ray direct observation

Wednesday, 28 September 2022 09:00 (25 minutes)

Direct measurements of cosmic rays in space have been extensively performed since the sixties by experiments on board stratospheric balloons, satellites and space stations. The main goals have been the search for primordial antimatter, signals of dark matter annihilation or of exotic particles, and the study of the mechanisms of production, acceleration and propagation of cosmic rays.

In recent years experiments have measured the energy spectra of cosmic rays very precisely, and revealed several new features: a remarkable excess of the positrons has been observed as well as a spectral hardening of cosmic ray nuclei above several hundreds of GeV. These results have important implications on our understandings of the origin and propagation of cosmic rays.

In this talk I will review the main scientific results of past and present experiments of CR direct measurements, with a look to the future.

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Session Classification: Cosmic Rays, Gamma Rays