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Cosmic rays: current status

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Important new results in four areas of particle astrophysics are on the agenda of this conference: atmospheric leptons; direct measurements of composition and spectrum to 100 TeV; air shower measurements from the knee to the ankle; and the upper end of the cosmic-ray spectrum. Each of these topics has a long history, with the techniques and the basic questions being established early on. What is relative contribution of pions, kaons and charm to leptons in the atmosphere? Do all species of primary cosmic rays have the same source spectra and propagation history? Where is the transition from galactic cosmic rays to a higher energy population of particles from extra-galactic sources? Is there a suppression of the highest energy particles due to energy loss during propagation through the cosmic background radiation? In this introductory talk I will comment on the current status of each topic in its historical context.

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