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Chacaltaya Cosmic Ray Observatory: past, present and future

The Chacaltaya Observatory has a distinguished 73-year legacy in astroparticle physics, particle physics, and related fields. Over the decades, it has been the site of pioneering research in cosmic ray physics, including the BASJE (Bolivian Air Shower Joint Experiment), which also made significant contributions to gamma-ray astronomy, solidifying its role as a trailblazer in the field during the 20th century.

Today, the observatory remains at the forefront of scientific discovery as the host of ALPACA (Andes Large PArticle Array for Cosmic Rays Physics and Astronomy), an international collaboration launched in 2017 involving institutions and universities from Japan, Bolivia, and Mexico. In addition to ALPACA, the observatory supports other major experiments, such as SAMADHA (South Atlantic Magnetic Anomaly Dosimetry at High Altitude), LAGO (Latin-American Giant Observatory), and HAGARES (High Altitude Gamma Rays Energy Spectrum).

This presentation will offer a historical perspective on the remarkable journey of the Chacaltaya Observatory, tracing its origins from the 1947 discovery of the pion—which led to its establishment in 1952—to its ongoing contributions to modern physics up to date.

Collaboration(s)

The direct collaboration is with the Institute for Physics Research (IIF), also belonging to UMSA.

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