The Chacaltaya Laboratory

The Chacaltaya laboratory is the highest laboratory in the world, at 5230 meters above sea level. It is located on the Chacaltaya mountain, which is one of the mountains in the Bolivian Andean plateau, in the middle of Cordillera Real.

Chacaltaya is considered the overlook of Cordillera Real, with numerous wonderful peaks over 5000 meters and many other over 6000 meters. The landscape from Chacaltaya reaches out from Illimani (6462 m) to Mururata (5775 m) to beyond Condoriri (5696 m), but the best view is the Huayna Potosi (6088 m), one of the most beautiful peaks in the world.

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**SCIENTIFIC EXPERIMENTS**

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**BASJE (Bolivian Air Shower Joint Experiment)**
Japanese-Bolivian collaboration
High energy gamma research by the detection of Extensive Air Showers (EAS) produced by primary cosmic rays in atmosphere.

**SLIM (Search for Light Magnetic Monopoles)**
INFN Torino-Bologna and University of Turin
Since 2000 the Search for Light Magnetic Monopoles (SLIM) has been carried out at Mount Chacaltaya. A passive nuclear track detector (400 m²) made of sheets of plastic material is used to detect magnetic monopole, and strange quark matter or "nuclearite" in the cosmic radiation. The experiment will allow to investigate the nature of the "dark matter".

**SASP (Surface Air Sampling Program)**
Universidad Mayor de San Andres (UMSA) of La Paz
Chacaltaya laboratory is one important SASP sampling location. The program was established in 1957 to track the global dispersion of radioactive debris resulting from atmospheric testing of nuclear bombs. In the 1980’s, the program focused on the global distributions of the naturally occurring radionuclides, beryllium-7 and lead-210.

**PHANTOM**
(Dosimetry in anthropomorphic phantom)
INFN Torino and Universidad Mayor de San Andres (UMSA)
An anthropomorphic phantom is used to assess the human exposure to cosmic radiation in high altitudes. The experiment allows to get data on the dose distribution in critical organs of the human body. The same technique can be used for dose evaluation in high altitude flight and in space aircraft.