

ASPERA Workshop

The next generation projects in Deep Underground Laboratories

June 30 – July 2, 2011, Zaragoza & Canfranc, Spain

The ANDES Underground laboratory in South America

X. Bertou

bertou@cab.cnea.gov.ar

CNEA/CONICET, Centro Atómico Bariloche, San Carlos de Bariloche, Río Negro, Argentina

ABSTRACT

The Agua Negra Deep Experiment Site (ANDES¹) is a proposal to build an underground laboratory in the Agua Negra tunnel, planned between Argentina and Chile. It would be the only underground laboratory in the southern hemisphere.

The Agua Negra tunnel is a 14km tunnel planned between the province of San Juan in Argentina and the 4th region of Coquimbo in Chile. It is of strategic importance for the region as it opens a new route from Brazil and Argentina towards the Asian market via Chile. The tunnel tender is expected to start in September 2011.

The deepest point of the Agua Negra tunnel is planned at about 1750m of depth, making it an ideal place to install an underground laboratory. The proposed ANDES laboratory would be handled by the Latin American Consortium for Underground Studies (CLES, for its Spanish/Portuguese name: Consorcio Latinoamericano de Estudios Subterráneos), formed by scientists from Argentina, Brazil, Chile and Mexico. Not only would it be an excellent opportunity for the Latin American countries to contribute more to underground science, it would also provide a unique opportunity to the whole underground scientific community by being the only underground laboratory in the southern hemisphere. This would open the door to ultra-long baseline neutrino studies, and allow checking the annual modulations observed in some Dark Matter experiments, among other experiments.

The status of the ANDES project will be presented, together with the proposed layout for the laboratory, the plans for external support labs, the structure of the CLES, and the scientific programme planned for the laboratory.

ANDES website: <http://andeslab.org/>