

Muon Geotomography for Mineral Exploration

Douglas Bryman

Department of Physics and Astronomy, University of British Columbia, Canada

Abstract

A tomographic imaging technique that uses cosmic rays for exploration of mineral deposits beneath the earth's surface will be discussed. The technique can be used to identify and accurately localize deposits such as massive sulfides (e.g. Cu-Ni deposits) or concentrated uranium ores which have higher density than the surrounding rock. 3-D images of the earth's density distribution at one kilometer or more can be obtained. A proof-of-principle demonstration was completed and development of green-field exploration methods and equipment is envisioned.