

## **Resolving electrons from protons in ATIC**

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The Advanced Thin Ionization Calorimeter (ATIC) experiment is designed for high energy cosmic ray ion detection. The possibility to identify high energy primary cosmic ray electrons in the presence of the 'background' of cosmic ray protons has been studied by simulating nuclear-electromagnetic cascade showers using the FLUKA Monte Carlo simulation code. The ATIC design, consisting of a graphite target and an energy detection device, a totally active calorimeter built up of 2.5 cm x 2.5 cm x 25.0 cm BGO scintillator bars, gives sufficient information to distinguish electrons from protons. While identifying about 80% of electrons as such, only about 2 in 10,000 protons (@ 150 GeV) will mimic electrons. In September of 1999 ATIC was exposed to high-energy electron and proton beams at the CERN H2 beam line, and this data confirmed the electron detection capabilities of ATIC.