



RESEARCH

MAGNETIC MONOPOLE: FIRST RESULTS OF MOEDAL

MoEDAL (Monopole & Exotics Detector at the LHC), the experiment dedicated to magnetic monopole research at CERN, narrows the field of investigation and sets new limits on the mass of these hypothetical particles. The result was published in the first half of August in the Journal of High Energy Physics (JHEP). The discovery of magnetic monopoles would have a tremendous impact in particle physics, astrophysics and cosmology.

Hypothesized by physicist Paul Dirac in 1931, magnetic monopoles have still not been observed by any experiment. However, although it is common experience that from a cut magnet only two smaller magnets can be obtained, with a north pole and a south pole, theory suggests that magnetism may be a property of elementary particles. And at the current collision energies of the LHC, physicists could be in a position to observe them. The presence of monopoles would be revealed by their magnetic charge and by their enormous ionizing power. The study published is based on the analysis of the data acquired during the first run of the LHC, when part of the detection system, the trapping detector, was at the prototype stage. At the moment, the MoEDAL collaboration is actively engaged in analysing the data acquired from the detector in its final configuration. ■