

## **The small-scale anisotropy of the cosmic radiation: results from Milagro**

*Friday, 28 October 2011 09:00 (20 minutes)*

The presence of a large-scale anisotropy in the cosmic radiation has been known for several decades. Earlier experiments lacked the statistical power to observe small-scale anisotropies in the cosmic radiation and there were good reasons to expect that on small scales the cosmic radiation would be smooth. The Milagro extensive air shower array discovered the presence of at least two small (of order 5-10 degrees) regions with significant excess (with respect to the expectations from the large-scale anisotropy) in the cosmic radiation near 10 TeV. The observed fractional excess is roughly  $5 \times 10^{-4}$  - about one order of magnitude smaller than the large-scale anisotropy. Because the Larmor radius of a 10 TeV proton is 0.005 pc explanations of these observations are difficult, however they seem to imply a relatively nearby source and non-standard diffusion of cosmic rays in the solar neighborhood. In this talk I will discuss the results from Milagro and several potential explanations of these observations.

**Presenter:** Dr PRETZ, John (LANL)

**Session Classification:** Anisotropy measurements