Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Cosmic-ray anisotropy studies with IceCube FRANK MCNALLY, University of Wisconsin - Madison, ICECUBE COLLABORATION — The IceCube neutrino observatory detects tens of billions of energetic muons per year produced by cosmic-ray interactions with the atmosphere. The size of this sample has allowed IceCube to observe a significant anisotropy in arrival direction for cosmic rays with median energies between 20 and 400 TeV. This anisotropy is characterized by a large scale structure of per-mille amplitude accompanied by structures with smaller amplitudes and with typical angular sizes between 10° and 20°. IceTop, the surface component of IceCube, has observed a similar anisotropy in the arrival direction distribution of cosmic rays, extending the study to PeV energies. The better energy resolution of IceTop allows for additional studies of the anisotropy, for example a comparison of the energy spectrum in regions of a cosmic-ray excess or deficit to the rest of the sky. We present an update on the cosmic-ray anisotropy observed with IceCube and IceTop and the results of first studies of the energy spectrum at locations of cosmic-ray excess or deficit.

Frank McNally
University of Wisconsin - Madison

Date submitted: 10 Jan 2014 Electronic form version 1.4