Contribution ID: **399** Type: **Oral**

High-energy neutrino interactions: first cross section measurements at TeV and above

Thursday 10 August 2017 14:00 (15 minutes)

Neutrino interactions, though feeble, are tremendously important in particle physics and astrophysics. Still, at neutrino energies above ˜350 GeV there has been, up to now, no direct experimental information on neutrino interactions; calculations rely on extrapolations from lower energies. Now, for the first time, we can measure the neutrino-nucleon cross section at the TeV scale and above, thanks to the recent discovery, by IceCube, of high-energy astrophysical neutrinos. We will show new cross section measurements extracted from the 4-year sample of IceCube High Energy Starting Event showers between 20 TeV and 2 PeV. The measurements agree with standard cross-section calculations and constrain new physics beyond the Standard Model at these energies.

Author: BUSTAMANTE, Mauricio (Ohio State University)

Presenter: BUSTAMANTE, Mauricio (Ohio State University)

Session Classification: Neutrinos

Track Classification: Neutrinos (astrophysical, atmospheric)