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A measurement of the diffuse astrophysical muon neutrino flux using multiple years of IceCube data.

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The IceCube Collaboration measured an all-flavor, high-energy astrophysical neutrino flux. In order to identify the sources of this flux, high-energy muon neutrinos are ideal messenger particles because of their excellent angular resolution. However, the first step is to confirm the observed flux in the muon neutrino channel using IceCube data from 2009 through 2014. The main background for this search are cosmic-ray-induced atmospheric muon neutrinos. High-purity neutrino event samples will be analyzed using a two-dimensional likelihood approach, taking full advantage of the information of neutrino energies and arrival directions with a consistent treatment of systematic uncertainties. The results of this analysis initially using IceCube data from 2009 through 2012 will be presented.

Primary authors: Mr RAEDEL, Leif (o=rwth,ou=Institutions,dc=icecube,dc=wisc,dc=edu); Mr SCHOENEN, Sebastian (o=rwth,ou=Institutions,dc=icecube,dc=wisc,dc=edu)

Presenter: Mr SCHOENEN, Sebastian (o=rwth,ou=Institutions,dc=icecube,dc=wisc,dc=edu)

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