

Searches of new physics with >TeV neutrinos in IceCube

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The IceCube neutrino observatory has not only discovered the existence of a cosmic neutrino component, but has also made precise measurements of the TeV atmospheric neutrino flux. Using these high-energy atmospheric neutrinos and the astrophysical neutrinos I will present results of searches for new neutrino flavors and interactions. On the former, I will report the status of searches for eV scale sterile neutrinos, whose sensitivity is enhanced in this sample due to resonance induced matter effect. On the latter, I will report the results of search for new neutrino interactions, in particular, between neutrinos and dark matter using the high energy starting events sample.

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