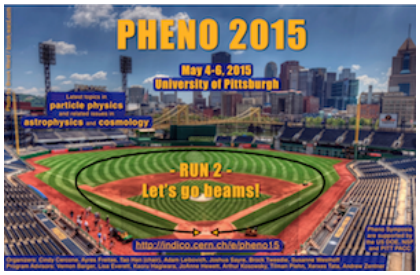

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Resonant Neutrino Self-Interaction in IceCube

Tuesday 5 May 2015 15:00 (15 minutes)

Recently IceCube experiment has revealed the spectrum of cosmic neutrinos in TeV-PeV range. However, null detection of 400-800 TeV neutrinos disagrees with a power law energy spectrum implied by the others. We interpret this “dip” feature as a hint of neutrino self-interactions. We investigate the possibility that well-motivated U(1)Lmu-Ltau model can explain the feature. We show that future (null-)detection of 400-800 TeV neutrinos can give us invaluable hints about structure of the neutrino sector. We also discuss its implication for CMB/BBN and supernova. Resonant neutrino self-interaction has a big impact on SN cooling.

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