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Probing Nu-Forces at IceCube

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The IceCube experiment has recently detected the highest-energy neutrino events yet recorded. This data is remarkable both for the significant excess of neutrino events above known backgrounds, and also for the conspicuous lack of events both above and below 1 PeV. I'll discuss a simple model of neutrino self-interactions mediated by a MeV-scale boson that can account for these peculiar features of the IceCube spectrum. If this mediator also interacts with dark matter, it can alleviate long-standing tension with the observed abundances and internal structure of dwarf galaxies.

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