The low-energy excess at ANTARES and IceCube Neutrino Telescopes: a potential Dark Matter signature

Friday 31 August 2018 15:15 (15 minutes)

Recent analyses of the diffuse TeV-PeV neutrino flux highlight a tension between different IceCube data samples that strongly suggests a two-component scenario rather than a single steep power-law. In this talk, I show how such a tension is further strengthened once the latest ANTARES (9-year) and IceCube (6-year) data are combined together. Remarkably, both experiments show an excess in the same energy range (40-200 TeV), whose origin could intriguingly be related to a Dark Matter signature. Hence, I discuss in a multi-messenger context the Dark Matter features required to account for the low-energy excess according to a statistical analysis on the neutrino energy spectrum and on the angular distribution of neutrino events.

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