

## **Diffuse neutrinos from extragalactic supernova remnants: Dominating the 100 TeV IceCube flux**

*Friday 18 March 2016 15:50 (20 minutes)*

In this talk, I will give a brief introduction to cosmic rays and their connection to high energy cosmic neutrinos. In this context I will introduce the IceCube experiment and its measured diffuse astrophysical flux of TeV-PeV neutrinos. The most plausible stellar sources for this diffuse flux are unique high energy cosmic ray accelerators like hypernova remnants (HNRs) and remnants from gamma ray bursts in star-burst galaxies, which can produce primary cosmic rays with the required energies and abundance. In this case, however, ordinary supernova remnants (SNRs), which are far more abundant than HNRs, produce a comparable or larger neutrino flux in the ranges up to 100-150 TeV energies, implying a spectral break in the IceCube signal around these energies. The SNRs contribution in the diffuse flux up to these hundred TeV energies provides a natural baseline and then constrains the expected PeV flux.

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