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## Neutrino detections in Tidal disruption events.

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The recent detection of astrophysical very-high-energy neutrinos by IceCube has spurred an intensive search for their sources. As a possible sources of VHE neutrinos, tidal disruption events (TDEs) have been suggested. Here we investigate a jetted TDE- Swift J1644+57 which is the best measured TDE in multiple wavebands- as a candidate astrophysical neutrino source. TDEs occur when a star approaches a massive black hole located at the centre of a galaxy. If the tidal radius is larger than the Swarzschild radius of the SMBH this leads to tidal forces violently disrupting the star. Matter accretes on the SMBH and produces luminous and long-lasting flares. We investigate the neutrino production in the TDE emission region using a hadronic code developed by Boettcher et al (2013). This is done through a parameter study which leads to a production of fits for the spectral energy distribution (SED) of the source and evaluated the expected neutrino detection rate by IceCube. We present a parameter study of how the expected neutrino detection rate depends on various source parameters.

**Apply to be considered for a student award (Yes / No)?**

Yes

**Level for award (Hons, MSc, PhD, N/A)?**

MSc

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