

Jetted Tidal disruption events: black hole spin, jet components and circumnuclear medium

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A star will be destroyed by tidal forces when it passes close enough by a supermassive black hole (SMBH). These events known as TDEs are expected to produce luminous flare emission in the UV to X-ray band. The observations of Sw J1644+57, in particular, suggest that at least some TDEs can launch an on-axis relativistic jet. A common speculation is that these rare events are related to rapidly spinning BHs, and the jet is powered by the Blandford-Znajek mechanism. Until now, four on-axis jetted TDEs were detected, i.e., Sw J1644+57, Sw J2058+05, Sw J1112.2-8238 and recently AT2022cmc. The rich observation data (e.g., X-ray QPOs, radio data etc.) enable us to explore the properties of BH, jet and circumnuclear medium (CNM). In this talk, I will present our constraints on BH spin, jet components and CNM profile.

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