



Contribution ID: 174

Type: **Invited talk in a parallel session**

## Observations of repeating nuclear transients

*Tuesday, 9 July 2024 15:00 (20 minutes)*

The deployment of large sky surveys are enabling the characterization of the transient night sky in unprecedented detail. Among other things, such surveys are revealing novel modes of variability around supermassive black holes which are incompatible with the behaviour of active galactic nuclei.

This includes quasi-periodic X-ray eruptions, or QPEs, which repeat on timescales of hours-days and have so far been observed exclusively at X-ray wavelengths, but whose origin remains debated (although many different theoretical models exist to explain their broad properties).

On longer timescales (10s-1000s of days), optical and X-ray surveys are discovering sources exhibiting repeated flares consistent with the tidal disruption events (TDEs) of stars by SMBHs, which are likely partial stripping events of stellar objects on bound, highly eccentric orbits.

Although they occur on vastly different timescales, and their properties are far from homogeneous, evidence is emerging that these two classes of objects may be closely related.

I will present an overview of the observational properties of these repeating nuclear transients, highlight their similarities and differences, and present the current evidence for a connection between QPEs and TDEs and its implications.

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**Session Classification:** Repeating transients in galactic nuclei: confronting observations with theory

**Track Classification:** Multimessenger Astrophysics (MA): Repeating transients in galactic nuclei: confronting observations with theory