



Contribution ID: 439

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

X-ray approach to the magnetar-FRB connections using NICER

Friday, 12 July 2024 17:00 (30 minutes)

The NICER (Neutron star Interior Composition ExploreR) X-ray telescope on the International Space Station can provide a powerful approach to the magnetar and FRB connections using its large effective area and prompt follow-up observation of transients. Our NICER magnetar and magnetosphere (M&M) science collaboration has observed several transient magnetars and FRB-related phenomena. We detected X-ray enhancement associated with giant radio pulses, a phenomenon similar to FRBs, from the Crab pulsar, performed follow-up observations of the Galactic magnetar SGR 1935+2154 after it produced an FRB burst in 2020, and in 2022, and discovered twin glitches before and after the FRB from the same source, SGR 1935+2154. Here, we review these NICER observations and related X-ray observations.

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Session Classification: Galactic and extragalactic magnetars: recent observations and theoretical progress

Track Classification: Compact Objects and Stellar Evolution (CO): Galactic and extragalactic magnetars: recent observations and theoretical progress