

Department of Physics and Astronomy Colloquium Series

Tuesday, February 27, 2024 at 2:30pm in PSE 317

Speaker: Matteo Trudu

Institution: INAF-Osservatorio Astronomico di Cagliari

Title: Searching for fast radio bursts across the full electromagnetic spectrum

Abstract:

Fast radio bursts (FRBs) are radio flashes originating from unknown sources outside our Galaxy. To date, FRBs have only been detected in the radio band.

On April 28th, 2020, the Galactic magnetar SGR 1935+2154 emitted two radio bursts closely resembling those produced by FRBs, with simultaneous detections in the high-energy band. This unprecedented result suggests that magnetars are plausible sources of FRBs, at least for a subset of them, and strongly motivates panchromatic campaigns toward known FRB sources to identify their high-energy and possibly optical counterparts.

In this talk, I will outline the multi-wavelength campaigns conducted on FRB sources, focusing in particular on the current upper limits we have been able to set. These limits constrain both the source(s) behind FRBs and the emission mechanism(s) producing them.