Contribution ID : **23** Type : **In person**

Search for Millicharged dark matter via Multimessenger Time-Delay Analysis of GRB GW170817A

Tuesday, 29 July 2025 11:00 (30)

We derive new constraints on millicharged dark matter from the multimessenger observation of GW170817. In the neutron star merger event GW170817, the first detection of a gamma-ray burst (GRB) delayed by approximately 1.7 seconds relative to the gravitational wave emission was observed. Utilizing this delay, we constrain the millicharge parameter of dark matter within the large-scale structure of the universe. For dark matter masses below 10−15 eV, the millicharge parameter is constrained to be less than 10−14, representing the most stringent limits achieved to date.

Primary author(s) : Dr ZHANG, Wenxing (Hebei University)

Presenter(s) : Dr ZHANG, Wenxing (Hebei University)

Session Classification : Morning Session