Trottier Space Institute at McGill

ASTROPHYSICS SEMINAR SERIES

CRAQ
Understanding the Universe

Gravitational attraction: dynamically enhanced formation of millisecond pulsars in globular clusters

Claire Ye | *University of Toronto*

A high specific abundance of millisecond radio pulsars has been observed in globular clusters (GCs), motivating theoretical studies of the formation and evolution of these sources through stellar evolution coupled to stellar dynamics. In this talk, I will first demonstrate how we model millisecond pulsars in GCs using realistic cluster simulations. I will show the importance of electron-capture supernovae for neutron star retention, and how millisecond pulsar formation is greatly enhanced through dynamical interaction processes. I will also present some latest results on isolated millisecond pulsars, which are especially intriguing given the fact that millisecond pulsars are descendants of binary star systems. I will demonstrate the potential formation channels of isolated millisecond pulsars, some of which may also link to the formation of magnetars and the newly discovered fast radio bursts in a GC.

14 FEB 2023 **3:30 PM EST** **BELL ROOM**