

GW FROM EMRIS IN ROTATING CDM SPIKE AND SOLITONIC DM SPIKE

SEMINAR

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01 JULY 2026



03:00 PM



PAMU SEMINAR ROOM



Abstract

Gravitational wave (GW) signals from EMRIs are a key observational target for the next gen detectors. However, the waveforms may be affected by the astrophysical environment surrounding the central black hole (BH), and in particular by the surrounding dark matter (DM) distribution. In this talk, I will discuss the formation and effect of DM 'spikes' on emitted GW waveform for -- a) Galactic rotating CDM halo & b) Galactic Scalar field DM distribution. I will show that the modifications due to the spin of the primary BH improve the detection prospects of DM spikes with LISA, and must be taken into account for future parameter estimation studies. On the other hand, effects of Solitonic DM spikes produces significantly different result than CDM counterpart, and can therefore constitute a probe for such scalar field dark matter prescriptions.

Everyone is invited to attend