



Department of Physics and Astronomy
FALL 2024 Colloquium Series

“Calculating the Gamma-ray Luminosity Function Expected in Neutron Star Mergers’ Jets”

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Binary neutron star (BNS) mergers result in short gamma-ray bursts (sGRB). The number of GRBs as a function of their gamma-ray luminosity is observed to be a "broken" power-law function for short GRBs. We explore the possibility that this luminosity function is an intrinsic property of the resulting central engines in BNS mergers. We calculate the gamma-ray luminosity of short GRBs starting from the two merging objects using the results of numerical simulations published in the literature. We will report on our efforts to use the probability of neutron star mergers as a function of their initial masses to determine if their luminosity function is a broken power-law as observed.

Thursday, December 5, 2024
4:00 - 5:20PM

MND1015

Open & Free to all students, faculty and public