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A model for neutrino emission from nuclear accretion disks MICHAEL DEATON, Washington State University, SPEC COLLABORATION[1]
— Compact object mergers involving at least one neutron star can produce short-lived black hole accretion engines. Over tens to hundreds of milliseconds such an engine consumes a disk of hot, nuclear-density fluid, and drives changes to its surrounding environment through luminous emission of neutrinos. The neutrino emission may drive an ultrarelativistic jet, may peel off the disk's outer layers as a wind, may irradiate those winds or other forms of ejecta and thereby change their composition, may change the composition and thermodynamic state of the disk itself, and may oscillate in its flavor content. We present the full spatial-, angular-, and energy-dependence of the neutrino distribution function around a realistic model of a nuclear accretion disk, to inform future explorations of these types of behaviors.

[1]Spectral Einstein Code (SpEC)

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