

Monte Carlo Simulations of Radiation from Compact Objects

Edison Liang, Markus Boettcher, Dechun Lin (Rice University)

We have performed Monte Carlo simulations of x-and-gamma-ray emissions from accreting weakly magnetized neutron stars and inner disks of accreting black holes. We will present simulation results for the emissions from the Alfvén radius of a neutron star and hot ion tori around the black hole horizon, using both internal synchrotron soft photons and external blackbody photons, and including the effects of wave turbulence acceleration and Coulomb coupling to virial ions.