

Abstract Submitted  
for the NWS15 Meeting of  
The American Physical Society

**Accretion of The Magnetized Neutrino-cooled Torus on a Rotating Black Hole** FATEMEH HOSSEIN NOURI, Washington State Univ, SXS COLLABORATION — Neutrino-cooled accretion flow around a black hole, produced by a compact binary merger, is a promising scenario for a short duration gamma ray burst central engine. The turbulence caused by magneto-rotational instability is expected to play an important role in driving accretion and thermal equilibrium of the disk. We study the magnetically-driven post-merger evolution of a black hole-neutron star binary system using results from a previous simulation and Einsteins Spectral Codes MHD module. We mostly focus on studying the effects of neutrino cooling and magnetic field on the structure of the disk and neutrino emission and neutrino-antineutrino energy deposition of the disk.

Fatemeh Hossein Nouri  
Washington State Univ

Date submitted: 09 Apr 2015

Electronic form version 1.4