Abstract Submitted
for the APR16 Meeting of
The American Physical Society

**MHD simulations of NSNS mergers in full GR: the role of the initial B field on the emergence of sGRB jets II** RYAN LANG, University of Wisconsin-Milwaukee, VASILEIOS PASCHALIDIS, Princeton University, MILTON RUIZ, Universidad Industrial de Santander, STUART SHAPIRO, University of Illinois at Urbana-Champaign — Mergers of neutron star-neutron star (NSNS) binaries are among the most promising candidates for the engines that power short gamma-ray bursts (sGRBs). The most likely sGRB model requires the presence of a highly relativistic jet. However, recent relativistic simulations of NSNS mergers have shown that it is difficult for such jets to emerge following the delayed collapse of the hypermassive neutron star (HMNS) remnant. Varying the initial NS magnetic field in an NSNS binary, we have performed magnetohydrodynamic simulations in full general relativity that explore the formation of jets from the black hole-disk system following the HMNS collapse. In this talk we focus on initial dipole magnetic fields which extend from the neutron star interior into the exterior.

Ryan Lang
University of Wisconsin-Milwaukee

Date submitted: 07 Jan 2016 Electronic form version 1.4