

Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Hyperon Bulk Viscosity in Neutron Star Mergers ALEXANDER HABER, MARK ALFORD, Washington University, St. Louis — In hyperonic matter, a phase lag between an imposed density oscillation and the beta reequilibration of the particle content, gives rise to a hyperonic bulk viscosity. Hyperonic bulk viscosity has been computed in the past for low temperatures and mostly by using a contact interaction matrix element. In neutron star mergers, much higher temperatures and densities than in an isolated star are reached. Therefore, it is necessary to reevaluate this phenomenon in the physical environment of neutron star mergers by including all possible reactions and going beyond the simple Fermi surface approximation. If bulk viscosity is sufficiently strong, it can significantly dampen density oscillations and should be included in merger simulations.

Alexander Haber
Washington University, St. Louis

Date submitted: 01 Jul 2019

Electronic form version 1.4