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Effects of a new Equation of State on Binary Neutron Star Mergers ANDREA ENDRIZZI, Univ of Trento, DOMENICO LOGOTETA, Univ of Pisa, BRUNO GIACOMAZZO, Univ of Trento, IGNAZIO BOMBACI, Univ of Pisa, RICCARDO CIOLFI, INAF Padova, WOLFGANG KASTAUN, Max Planck Institute, Hannover — We present results of fully general relativistic simulations of binary neutron star mergers employing a new cold chiral effective field theory equation of state that we named BL. We offer a comparison with respect to a standard relativistic mean field equation of state ($GM3$) and give a full analysis of the dynamics during both the inspiral and post-merger phases. We extract the gravitational wave signal for all our simulations and analyze differences in the signals from different models. We also describe the effects of this new equation of state on the dynamics of the ejecta and on possible electromagnetic counterparts.

Andrea Endrizzi
Univ of Trento

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