Abstract Submitted
for the APR15 Meeting of
The American Physical Society

New Method to Construct Initial Data for Compact Object Binaries PABLO LAGUNA, MICHAEL CLARK, Georgia Inst of Tech — We introduce a new approach to construct initial data for binary systems with neutron star companions. The approach is a generalization of the puncture initial data for binary black holes based on Bowen-York extrinsic curvature solutions to the momentum constraint. As with the binary black holes case, the new approach allows one setting orbital configurations with input directly from post-Newtonian approximations. We demonstrate the effectiveness of this initial data method with evolutions of double neutron star and black hole-neutron star binariess in quasi-circular orbits.

Pablo Laguna
Georgia Inst of Tech

Date submitted: 06 Jan 2015 Electronic form version 1.4