Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Spin effects in the nonlinear gravitational-wave memory from inspiralling binaries[1] MARC FAVATA, Montclair State University, XINYI GUO, Harvard University — The gravitational-wave memory effect is a time-varying but non-oscillatory contribution to the gravitational-wave amplitude. The nonlinear form of the memory arises from the gravitational waves produced by previously emitted gravitational waves. Despite the fact that it originates from higher-order interactions, it modifies the gravitational-waveform at leading (0PN) order. Understanding the memory is important for building accurate knowledge of the gravitational-wave signal in order to probe the nonlinearity of general relativity. Previous analytic calculations of spinning binary waveforms have neglected the memory component. Here we compute the memory corrections to the waveform due to spin-orbit interactions. We consider both aligned and precessing spin configurations.

[1]This research is supported by NSF Grant No. PHY-1308527.

Marc Favata
Montclair State University

Date submitted: 08 Jan 2015 Electronic form version 1.4