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Comparing Post-Newtonian and Numerical Relativity Precession Dynamics SERGUEI OSSOKINE, Department of Astronomy and Astrophysics, University of Toronto, MICHAEL BOYLE, LAWRENCE KIDDER, Center for Radiophysics and Space Research, Cornell University, ABDUL MROUE, HARALD PFEIFFER, Canadian Insititute for Theoretical Astrophysics, MARK SCHEEL, BELA SZILAGYI, Theoretical Astrophysics 350-17, California Institute of Technology — Binary compact objects are expected to be some of the best sources for gravitational wave signals for the second generation gravitational wave detectors such as Advanced LIGO and Virgo. Post-Newtonian theory is one of the leading ways of approximately modeling such systems, however it is expected to be inaccurate in the strong-field regime, which has been quantified for non-precessing systems by many groups. In this talk, a systematic comparison of numerical relativity simulations of precessing binary black holes from the SpEC public catalog to Post-Newtonian approximants is discussed. The focus of the work is on the orbital dynamics of the system – in particular, the precession of the orbital plane and the black hole spins, as well as the orbital phasing.

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