

Abstract Submitted
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Transitional precession in binary black hole systems SERGUEI OSSOKINE, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), LAWRENCE KIDDER, Center for Astrophysics and Planetary Science, Cornell University, HARALD PFEIFFER, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), SXS COLLABORATION — Binary black holes continue to represent some of the best sources of gravitational waves. For precessing systems, it has long been predicted by post-Newtonian theory that transitional precession can take place. Transitional precession occurs when the spin, orbital and total angular momentum vectors drastically change direction during the evolution, in sharp contrast to the more standard scenario where these vectors precess in a cone. The rich dynamics of transitional precession is in turn imprinted on the gravitational waveform. We present numerical relativity simulations of transitional precession and compare the results to predictions from state-of-the-art waveform models.

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