

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Rapidly spinning binary black hole initial data¹ GEOFFREY LOVELACE, ROBERT OWEN, Cornell University, HARALD PFEIFFER, TONY CHU, California Institute of Technology — Numerical simulations of binary-black-hole spacetimes must begin with initial data that both satisfy the constraint equations of general relativity and lead to evolutions with the desired physical properties. We use the extended conformal thin sandwich equations to construct constraint-satisfying binary-black-hole initial data with i) nearly-maximal spins aligned with the orbital angular momentum and ii) low orbital eccentricities. Specifically, we construct conformally-flat data with dimensionless spins larger than 0.97 and conformally-curved data with spins larger than 0.995.

¹We would like to acknowledge the Sherman Fairchild Foundation, the Brinson Foundation, NSF grants PHY-0601459, PHY-0652995, DMS-0553302, PHY-0652952, DMS-0553677, PHY-0652929, and NASA grants NNG05GG52G and NNG05GG51G.

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Date submitted: 11 Jan 2008

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