Rapidly spinning binary black hole initial data[1] GEOFFREY
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CHU, California Institute of Technology — Numerical simulations of binary-black-
hole spacetimes must begin with initial data that both satisfy the constraint equa-
tions 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.

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