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Self-force in a gauge appropriate to separable wave equations[1]
JOHN FRIEDMAN, TOBIAS KEIDL, SWAPNIL TRIPATHI, ALAN WISEMAN, University of Wisconsin-Milwaukee, SAMUEL GRALLA, University of Chicago —
Gravitational waves from the inspiral of a stellar-size black hole to a supermassive black hole can be accurately approximated by a point particle moving in a Kerr background. The talk presents progress on computing the self-force in a gauge that is constructed from the gauge-invariant Weyl tensor. The gauge and the renormalization method are chosen to compute a perturbed metric and renormalized self-force from the Teukolsky equation. The method is related to earlier work by Cohen, Kegeles, Lousto, Detweiler, and Whiting, and to the MiSaTaQuWa renormalization.

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John Friedman

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