Abstract Submitted
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On finding fields and self-force in a gauge appropriate to separable wave equations[1] JOHN FRIEDMAN, TOBIAS KEIDL, ALAN WISEMAN, University of Wisconsin-Milwaukee — 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. We report progress on finding the renormalized self-force from the Teukolsky equation. The method is related to the MiSaTaQuWa renormalization and to the Detweiler-Whiting construction of the singular field. It relies on the fact that the renormalized ψ_0 (or ψ_4) is a *sourcefree* solution to the Teukolsky equation; and, following Chrzanowski, Cohen and Kegeles, one can therefore reconstruct a nonsingular renormalized metric in a radiation gauge.

References:
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