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Filling in the missing pieces in a radiation-gauge self-force calculation[1] JOHN FRIEDMAN, University of Wisconsin-Milwaukee, TOBIAS KEIDL, University of Wisconsin-Washington County, ABHAY SHAH, University of Wisconsin-Milwaukee — When computing the self force in a radiation gauge, one needs separately to compute the nonradiative contributions: These arise from the change in the mass and angular momentum of the spacetime and from a discontinuous gauge transformation associated with a change in the center of mass. In a Schwarzschild background these are easily distinguished as the l=0 and l=1 parts of the perturbed metric. In a Kerr background, additional subtleties arise from the fact that the perturbed field equations mix different values of l and, for generic orbits, from the fact that angular and time harmonics of a point-particle source are nonzero in the region between periastron and apastron. The talk presents ways to handle each of these difficulties.

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John Friedman
University of Wisconsin-Milwaukee

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