

Existence of a Hamiltonian description of the self-force: new results and challenges

Thursday, 6 July 2023 16:40 (20 minutes)

We show that the motion of a spinning point particle in stationary spacetime is Hamiltonian when we include the spin-curvature coupling and the conservative piece of the self-force to first order in the mass ratio and spin of the secondary. We also report ongoing progress in attempts to extend this result to spinless particles at second order in the mass ratio. Problems involving the definition of a “conservative sector”, as well as infrared divergences that arise at second order are discussed. This last topic is a collaboration with Adam Pound and Abe Harte.

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