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Computing precession and spin-curvature coupling for small bodies orbiting Kerr black holes SCOTT HUGHES, UCHUPOL RUANGSRI, Massachusetts Institute of Technology, SARAH VIGELAND, University of Wisconsin-Milwaukee — A non-spinning small body that orbits a Kerr black hole follows a trajectory that looks like a geodesic corrected by “self force” effects that drive inspiral and shift the small body’s orbital frequencies. If the small body is spinning, then additional forces arise from the coupling of its spin to the curvature of the larger black hole. In this talk, I will describe recent work to compute the precession of this small body in the frequency domain for generic orbit geometries and generic small body orientations, and show how this result can be used to compute the spin-curvature force in a computationally effective way.

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