Abstract Submitted
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Static Self-Forces in Five Dimensions PETER TAYLOR, Cornell University — There has been considerable recent interest in the self-force formalism in higher dimensional space-times, particularly in odd dimensions since the analogue of the Detweiler-Whiting singular field is unknown. Moreover, a recent article by Beach, Poisson and Nickel provocatively suggests that the self-force in five dimensions depends on the internal structure of the charge. In this talk, I will develop an axiomatic approach to construct a singular field for a static point particle in 5D. I will then revisit the calculation of the self-force on a static charge in a 5D black hole space-time and show that, in the context of our regularization prescription, the self-force does not depend on the internal structure.

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