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Inspirals into a charged black hole RUOMIN ZHU, Emory University, THOMAS OSBURN, Oxford College of Emory University — The effect of electric charge on gravitational wave observations involving compact binaries is investigated. Extreme and intermediate mass-ratio inspirals are modeled using a small mass-ratio approximation. We consider the case where the larger binary component is a Reissner-Nordstrom black hole and the smaller binary component is a neutral compact object. The effect of radiation reaction on the smaller body is quantified through calculation of electromagnetic and gravitational energy fluxes. Through this analysis we estimate the level of charge necessary to affect gravitational wave observations.

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