

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

General-relativistic simulations of quasi-circular inspirals of charged black holes¹ GABRIELE BOZZOLA, VASILEIOS PASCHALIDIS, University of Arizona — The electric charge is a parameter often neglected in general-relativistic simulations of black holes. As a result, little is known about the dynamics of charged binary black holes in the latest stages of their inspiral. In this talk, we present our first numerical-relativity simulations of quasi-circular mergers of these systems. Using a $3 + 1$ formalism, we obtained fully self-consistent solutions of Einstein-Maxwell's equations, and extracted the electromagnetic and gravitational output. We will discuss what GW150914 can teach us about the charge of astrophysical black holes and fundamental physics in light of our new simulations.

¹This work was supported by NSF Grant PHY-1912619 to the University of Arizona. Gabriele Bozzola is supported by the Frontera Fellowship by the Texas Advanced Computing Center (TACC). Frontera is funded by NSF grant No. OAC-1818253.

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Date submitted: 07 Jan 2021

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