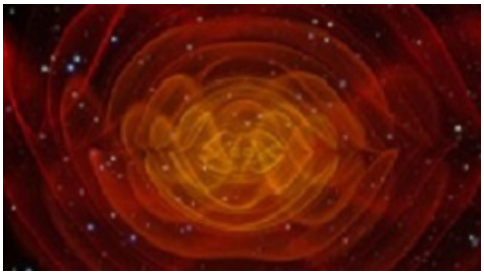

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Self-force on a scalar charge in circular orbits about a Reissner-Nordstr\"{o}m black hole

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We calculate the self-force exerted on a scalar charge in a circular orbit about a Reissner-Nordstr\"{o}m black hole via mode-sum regularization. We also compute the radiative fluxes towards infinity and down the black hole. We pay particular attention to the dependence of the self-force and radiative fluxes on the black hole's charge-to-mass ratio, the controlling parameter of the Reissner-Nordstr\"{o}m geometry. We find that as the black hole approaches extremality, the radiative fluxes, and the self-force decreases.

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