Self-force with numerical relativity tools IAN VEGA, University
of Guelph, PETER DIENER, Louisiana State University, WOLFGANG TICHY,
Florida Atlantic University, STEVE DETWEILER, University of Florida — We
review recent progress towards developing an approach to self-force problems that
take advantage of extant infrastructure within numerical relativity. We shall de-
scribe our prescription and its application to the case of a scalar charge in a circular
orbit around a Schwarzschild black hole with the use of two evolution codes originally
written for numerical relativity applications. Within this framework, the self-force
on the charge and the corresponding energy fluxes are computed to within 1% of the
known correct answer. This constitutes the first successful calculation of a self-force
in a (3+1) setting.

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