

Abstract Submitted
for the APR17 Meeting of
The American Physical Society

General Relativistic Smoothed Particle Hydrodynamics code developments: A progress report¹ JOSHUA FABER, ZACHARY SILBERMAN, MONICA RIZZO, Rochester Institute of Technology — We report on our progress in developing a new general relativistic Smoothed Particle Hydrodynamics (SPH) code, which will be appropriate for studying the properties of accretion disks around black holes as well as compact object binary mergers and their ejecta. We will discuss in turn the relativistic formalisms being used to handle the evolution, our techniques for dealing with conservative and primitive variables, as well as those used to ensure proper conservation of various physical quantities. Code tests and performance metrics will be discussed, as will the prospects for including smoothed particle hydrodynamics codes within other numerical relativity codebases, particularly the publicly available Einstein Toolkit.

¹We acknowledge support from NSF award ACI-1550436 and an internal RIT D-RIG grant.

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Date submitted: 28 Sep 2016

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