Abstract Submitted
for the APR10 Meeting of
The American Physical Society

The Observational Limits of Ground Based Gravitational Wave Detectors: Core-collapse Supernovae MEAGAN LANG, Penn State University, RUXANDRA BONDARESCU, Penn State Univ, LEE SAMUEL FINN, Penn State University, RYAN FISHER, RAVI KOPPARAPU, Penn State Univ — Because they emerge unimpeded, the gravitational wave signatures of core-collapse SNe carry information about the progenitor and proto-neutron star or black hole that is otherwise beyond our observational reach. The wealth of astrophysical data, such as mass, rotation rate, degree of differential rotation, and bounce depth, that can be recovered from gravitational radiation produced by core-collapse SNe, presents an opportunity to gain significant insight into the physical processes underlying these events. We evaluate the sensitivity of current and future networks of ground-based GW detectors to GWs from stellar core-collapse SNe at varying distances from the Earth and place limits on their detectability.

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Date submitted: 26 Oct 2009 Electronic form version 1.4