Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Light curves and spectra of supernova shock breakout into inhomogenous winds[1] SHANE COFFING, CAROLYN KURANZ, University of Michigan, CHRIS FRYER, Los Alamos National Laboratory — Supernova explosions are primarily classified by the light curves they produce: the time evolution of their emission and spectral features. The earliest optical emission begins with shock breakout, when photons begin to pour out from the optically thick edge of the supernova shock into the surrounding circumstellar media. For massive stars exceeding roughly 10 times the mass of the sun, the circumstellar media is a strong, radial outflow known as a radiation driven wind. At early epochs, this wind may be very dense due to high mass loss rates at the end of the star's evolution and can be stratified due to episodic or unsteady mass loss. Furthermore, growing evidence supports that such outflows are inhomogeneous and clumpy, having large scale density perturbations. In this work, we present our first look at light curves and spectra of shock breakout into inhomogenous and clumpy winds, via multi-group radiation hydrodynamics simulations.

[1]This work is funded by the U.S. DOE NNSA Center of Excellence under grant number DE-NA0003869.

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Date submitted: 03 Jul 2019 Electronic form version 1.4