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General Relativistic Neutrino-Driven Turbulence in One-Dimensional Core-Collapse Supernovae[1] LUCA BOCCIOLI, GRANT MATHEWS, University of Notre Dame, EVAN O'CONNOR, Stockholm University — Convection and turbulence in core-collapse supernovae (CCSNe) are inherently three-dimensional in nature. However, 3D simulations of CCSNe are computationally demanding. Thus, it is valuable to modify simulations in spherical symmetry to incorporate 3D effects using some parametric model. In this talk, we report on the formulation and implementation of general relativistic neutrino-driven turbulent convection in the spherically symmetric core-collapse supernova code `GR1D`. This is based upon the recently proposed method of Supernova Turbulence in Reduced-dimensionality (*STIR*) in Newtonian simulations from Couch et al. (2020). When the parameters of this model are calibrated to 3D simulations, we find that our GR formulation of *STIR* requires larger turbulent eddies to achieve a shock evolution similar to the original *STIR* model. We also find that general relativity may alter the correspondence between progenitor mass and successful vs. failed explosions.

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