

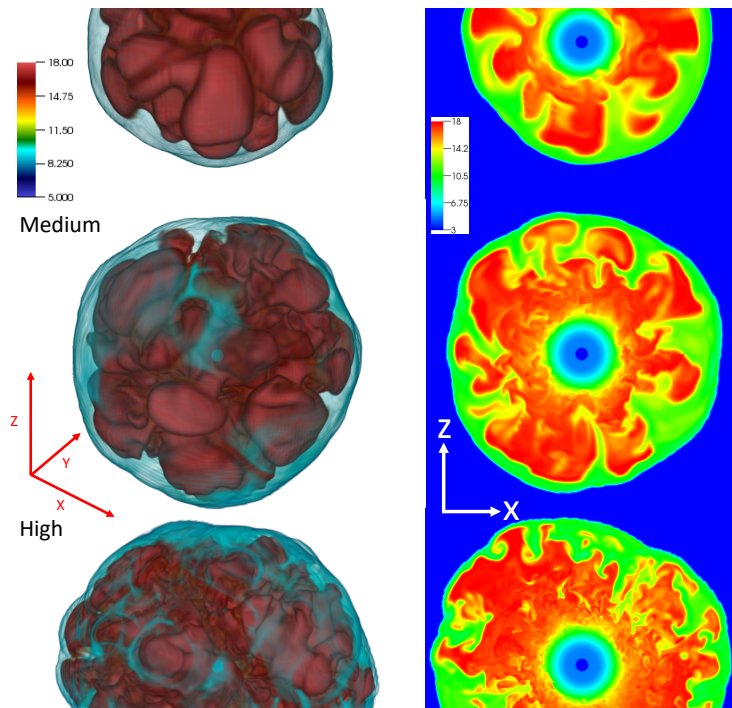
# Towards an Understanding of the Resolution Dependence of Core-Collapse Supernova Simulations

## Objectives

To determine the effect of angular resolution on the outcome and character of CCSN simulations.

## Impact

Through a 3D study of CCSN simulations for one progenitor, but with different angular resolutions, we have demonstrated the possibility of a qualitative effect of resolution.



## Accomplishments

For the same progenitor, changing only the number of angular bins in the theta and phi directions, we witness that our lowest resolution 3D simulation does not explode. However, when jumping up in resolution by factors of two in each angular direction on our spherical-polar grid, models then explode, and explode slightly more vigorously with increasing resolution. This suggests that there can be a qualitative dependence of the outcome of 3D CCSN simulations upon spatial resolution.

Citation: Hiroki Nagakura et al. MNRAS, in press, 2019 (arXiv:1905.03786) Contact : H. Nagakura or A. Burrows (Princeton)



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