
Contribution ID: **350** Type: **Talk**

# Gravitational Wave Signals from 3D NeutrinoSimulations of Core-Collapse Supernovae Hydrodynamics

*Monday, 7 December 2015 18:15 (20 minutes)*

To this day the exact nature of the detonation mechanise in core collapse supernovae reminds somewhat of a mystery. While numerical models are becoming more and more sophisticated, observations of the inner engine remain elusive. Because he core surrounded by dens stellar matter, electromagnetic radiation can only provide indirect information. Neutrinos and gravitational waves on the other hand can propagate almost unhindered thought the stellar material. For the last decade, or so, supernova modellers have predicted gravitational wave signatures based on their simulations.

I will follow in these footsteps and present a detailed analysis of the gravitational wave signal during the post-bounce phase, from the latest core collapse simulations. I present the signal arising from sophisticated three-dimensional simulations of three progenitors.

The theoretical signal from our simulations consists of two distinct features: One emission component below 250 Hz associated with the standing accretion shock instability and a one component above 300 Hz associated mainly with convection deep within the forming neutron star. The former component arises from both the proto-neutron star exterior and interior.

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**Session Classification:** 11 - Gravitational waves