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Core-collapse supernova gravitational-wave data representation

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Core-collapse supernovae (CCSNe) are exploding massive stars and the next Galactic event will be one of the most interesting astronomical events of the century. While these events are violent, the gravitational field is still relatively weak. Unlike the compact binaries with strong field regime where gravitational waveforms are given as spherical-harmonic modes in the Newman-Person formalism. It's natural to use quadrupole approximation to represent gravitational waves from CCSNe. However, the way of extracting and representing the gravitational wave data vary between CCSN simulation groups. We compare some of these approaches, primatily the the quadrupole approximation with the that is used for extracting gravitational waves from compact binaries. We study what data format would be suitable to store the gravitational wave data.

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