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Understanding GWs from core-collapse supernovae

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Core collapse supernovae is among the most exciting events that we expect to observe in the future by gravitational wave interferometers. They provide a unique multi messenger opportunity with the combined emission of gravitational waves, neutrinos and electromagnetic waves. In this talk I will focus in the current understanding of core-collapse GW signals and how they can be modelled in terms of normal oscillations modes of proto-neutron stars excited during the post-bounce phase before the onset of the SN explosion. The observation of such modes in the future by gravitational wave observatories (Virgo, LIGO) may allow to infer the properties of proto-neutron stars and learn about the engine powering supernova explosions.

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