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Evolution of close binary stars and their role in the most powerful stellar explosions

Friday, 9 July 2021 10:05 (35 minutes)

The majority of massive stars is born in close binary stars, and their evolution is strongly altered by their companion star. We discuss the main mechanisms of close binary interaction, and their relevance for understanding the diversity of core collapse supernovae. Binary interaction also affects, and sometimes enables, extreme events, like hypernovae, long-duration gamma-ray bursts, super luminous supernovae, and compact object merger. We will explore the capabilities and problems of binary evolution models in predicting these events and their discrete progenitor states, and the consequences thereof.

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