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The impact of supernova ejecta on their companion stars and pollution of the synthesized elements at the companion surface

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The progenitors of many supernovae are expected to be in binary systems. After the supernova explosion in a binary system, the companion star may suffer from mass stripping and be shock heated and polluted with heavy elements as a result of the impact of the supernova ejecta. If the binary system is disrupted by the supernova explosion, the companion star is ejected as a runaway star, and in some cases as a hypervelocity star. This talk will present the results of three-dimensional hydrodynamical simulations of the interaction between supernova ejecta and their companion stars, as well as pollution of the synthesized elements at the surface of companion stars during the interaction.

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