

Modelling on neutron star mergers: status and open issues

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A robust and quantitative understanding of neutron star mergers requires detailed numerical simulations. The latter must include all the relevant physics, resolve the necessary length scales, and cover all the important temporal phases. The key role of all fundamental interactions makes this task extremely challenging. In this talk, I will briefly summarize the present status of the field and highlight our present understanding. Despite the many insights achieved in the last years, many open issues remain, including the properties of hot nuclear matter and the relevance of weak interaction. The exploration and the solution of these open questions are essential to interpret past and future multimessenger detections from neutron star mergers.

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