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Strangeness in binary neutron star mergers and its signature

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The particle content of the interior of neutron stars is still unknown, especially in the case of very massive stars. It is clear that if hyperons or quarks are present, they will affect the dynamics of the merger of two neutron stars. The impact on the observables and even more the prospects for detectability are possibly very interesting, but also uncertain. In this talk, I will illustrate how the presence of quarks or hyperons can impact binary neutron star merger observables, including gravitational wave emission, based on recent simulations in numerical relativity. Moreover, I will show how the determination of the prompt collapse threshold can shed light on the interior particle content, based on the measurement of the nuclear incompressibility at ultrahigh densities.

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