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Nuclear equation-of-state in neutron star mergers

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Binary neutron star (BNS) mergers provide a unique probe of the dense-matter equation of state (EOS) across a wide range of parameter space, from the cold, equilibrium conditions of the inspiral to the shock-heated and dynamical environment of the post-merger remnant. In this talk, I will discuss what we can (and cannot) learn about the EOS from current and upcoming observations of binary neutron star inspirals. I will then present recent BNS merger simulations to discuss the new EOS constraints we may be able to extract from a future measurement of gravitational waves from the hot and massive remnant that forms following the merger.

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