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Numerical waveforms for neutron star mergers with the SpEC code[1] FRANCOIS FOUCART, Univ of New Hampshire, SXS COLLABORATION — Numerical simulations of binary neutron star and black hole-neutron star mergers play an important role in the development, calibration, and testing of waveform models used by current gravitational wave detectors. In this talk, I will discuss recent efforts to improve the accuracy and availability of waveforms generated with the SpEC code, for systems involving at least one neutron star. I will also review the development and use of improved 'spectral equations of state in merger simulations, and compare these equations of state with standard polytropic and piecewise-polytropic models in the context of accurate waveform generation. Finally, I will discuss what we have learnt about the accuracy of existing waveform models from the most accurate of these numerical simulations.

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