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**Multi-messenger probes of the neutron star equation of state**

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The gravitational wave emission from the merging binary neutron star system GW170817 arrived full of tidal information which can be used to probe the fundamental ultra-dense nuclear physics residing in these stars. Similarly, the X-ray observations of low-mass neutron star binaries found in globular clusters allow us to further probe this physics, particularly useful in measuring the neutron star radius. By combining these multi-messenger observations as prior knowledge, we find correlations between the neutron star radius, tidal deformability, and the nuclear matter parameters deterministic of the neutron star equation of state. We find such correlations for varying chirp masses, the dominant determining factor in the frequency evolution of the inspiral, so that one can apply the same method to future detections. We estimate how accurately one can measure nuclear parameters with future gravitational wave interferometers and show how such measurements can be improved by combining multiple events.