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Neutron star observations and dense matter

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In the last 10-15 years, observations of neutron stars have revolutionized our understanding of cold, catalyzed matter beyond nuclear saturation density. These observations include the discovery of high-mass neutron stars, limits on tidal deformability from gravitational wave observations, and measurements using NICER data of the radii of two neutron stars. These observations, combined with laboratory measurements and the application of chiral effective field theory, promise to improve even further within the next several years. I will discuss the observations, implications, and prospects for improvement.

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