



LABORATORY FOR ELEMENTARY-PARTICLE
PHYSICS (LEPP)

Theory Seminar



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Syracuse

**Neutron Star Mergers
Chirp About Vacuum
Energy**

Observations of gravitational waves from neutron star mergers open up novel directions for exploring fundamental physics: they offer the first access to the structure of objects with a non-negligible contribution from vacuum energy to their total mass. By considering three commonly used neutron star models we show that for large chirp masses the effect of vacuum energy on the tidal deformabilities can be sizable. Measurements of this sort have the potential to provide a first test of the gravitational properties of vacuum energy independent from the acceleration of the Universe, and to determine the size of QCD contributions to the vacuum energy.

Wednesday, May 2, 2018

2:00pm

401 Physical Sciences Building