Contribution ID: **15** Type: **not specified**

Multi-Messenger Studies of Binary Neutron Star Systems

Thursday 18 November 2021 15:00 (1 hour)

We discuss how one can use numerical-relativity simulations to derive gravitational-wave and electromagnetic models describing the binary neutron star coalescence. Such models can be used to perform multi-messenger studies in which the gravitational wave signals GW170817, GW190425, and the observed electromagnetic signals AT2017gfo and GRB170817A are analyzed. We combine the obtained information with an analysis of X-ray and radio observations of single neutron stars, nuclear theory computations, and information from heavy-ion collisions. In general, nuclear physics - multi-messenger astronomy studies provide new constraints on the neutron-star equation of state and the Hubble constant.

Presenter: DIETRICH, Tim (Nikhef)

Session Classification: Present and future of neutron star physics using gravitational waves