

Can we confirm Neutron Stars are Giant Hypernuclei with gravitational wave observations

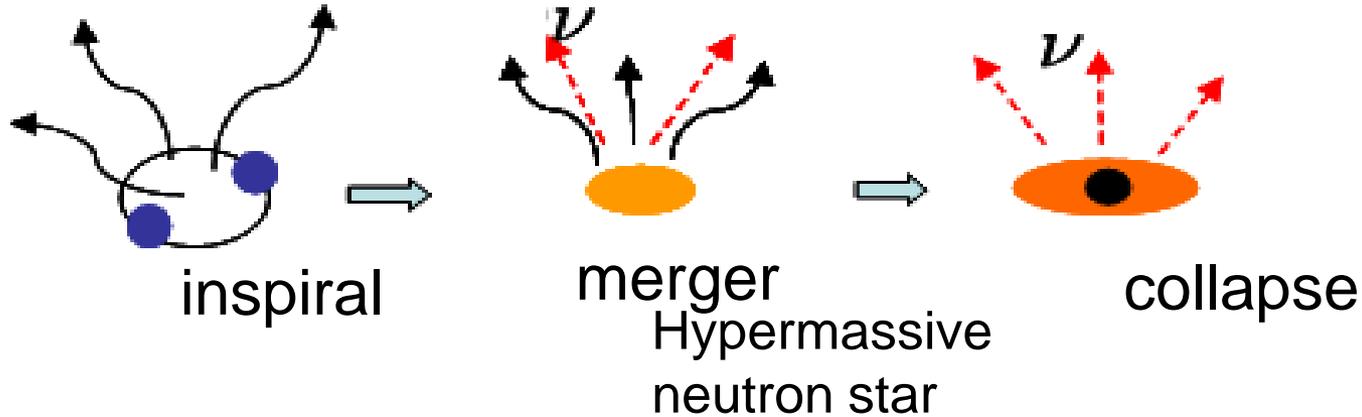
Kenta Hotokezaka(Kyoto University)

with K. Kyutoku, K. Kiuchi

and M. Shibata (YITP)

Motivation

Binary Neutron Star Merger



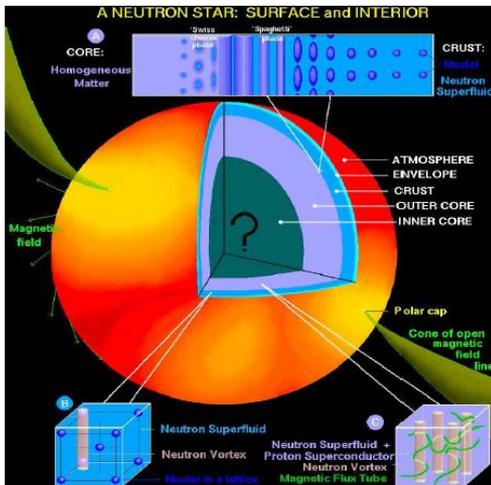
One of the most promising sources

for advLIGO, advVirgo, LCGT....

Gravitational Wave Observations



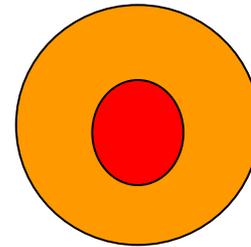
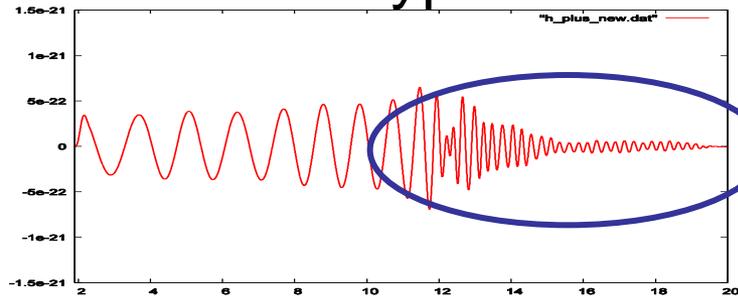
Measuring properties of
neutron star equation of state



Numerical Simulation (Numerical Relativity)

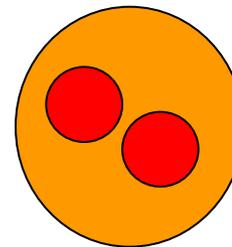
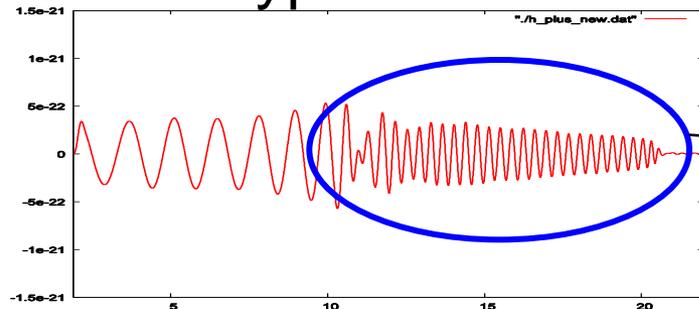
- Binary Neutron Stars : $1.35M_{\odot} - 1.35M_{\odot}$
- 4 piecewise polytropic EOSs

EOS without hyperons



Hypermassive Neutron Star
with single core

EOS with hyperons



Hypermassive Neutron Star
with double cores

Dynamics & GW form

significantly depend on the EOS !!