

Population synthesis predictions: what is already done and what's possible now?

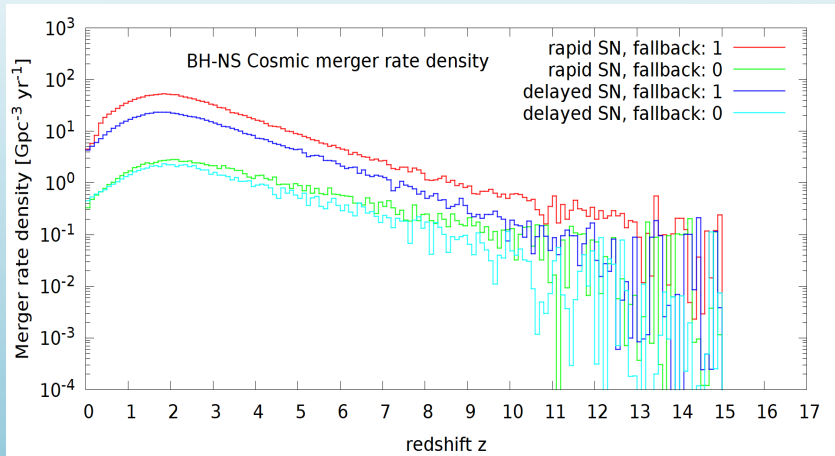
GW sources in O3 era, Kavli IPMU, Japan

Paweł Drozda

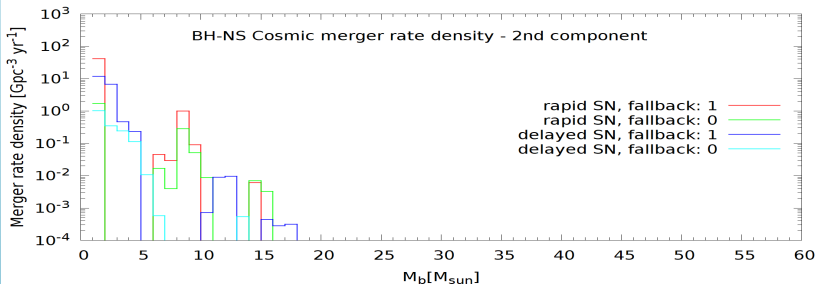
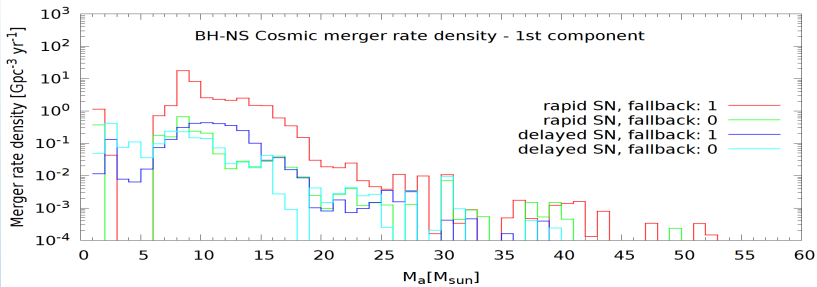
21.01.2020

Merger rate density(redshift)

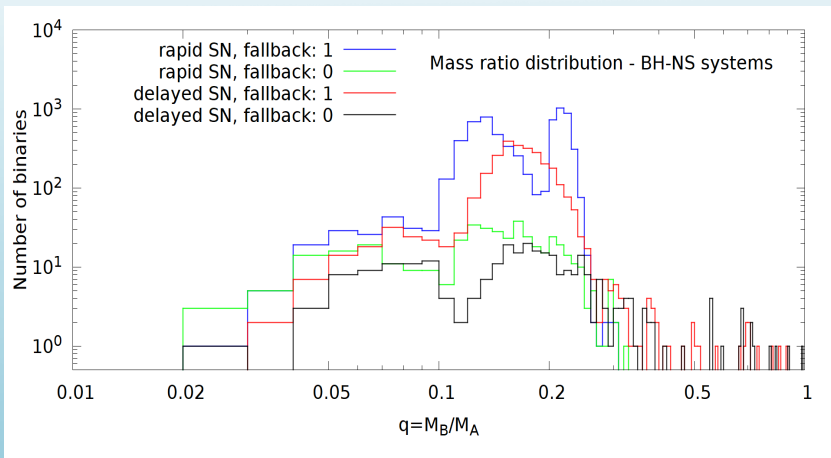
StarTrack(Belczynski et al.(2002)) → isolated binary evolution



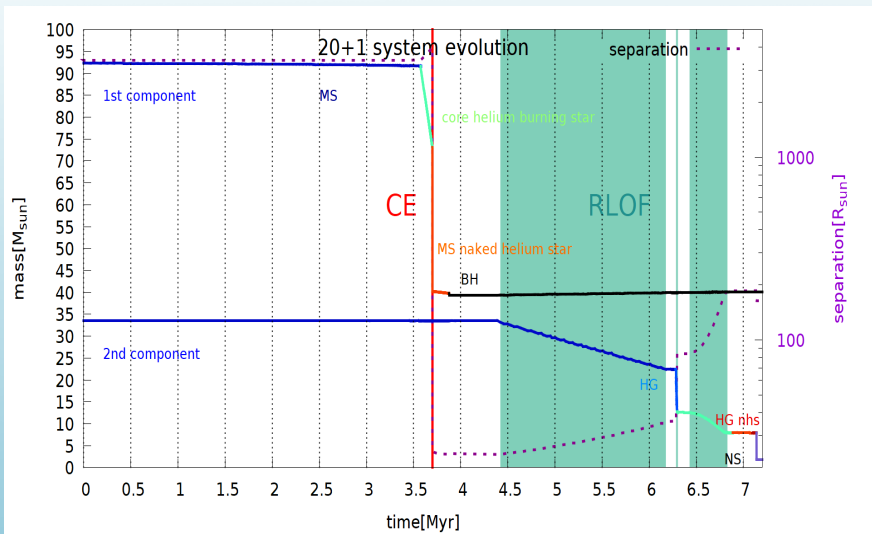
Merger rate density(mass), $z < 2$



BH – NS systems: mass ratios



Evolutionary tracks



> $0.1 M_{\odot}$ ejection for < 2% of mergers

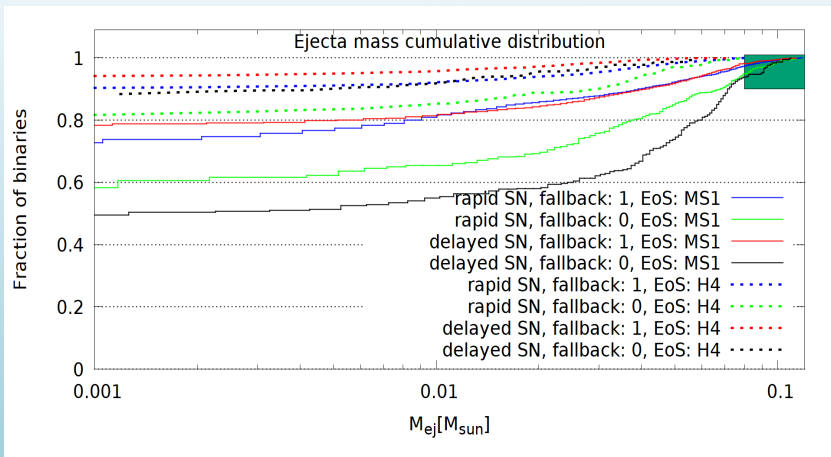
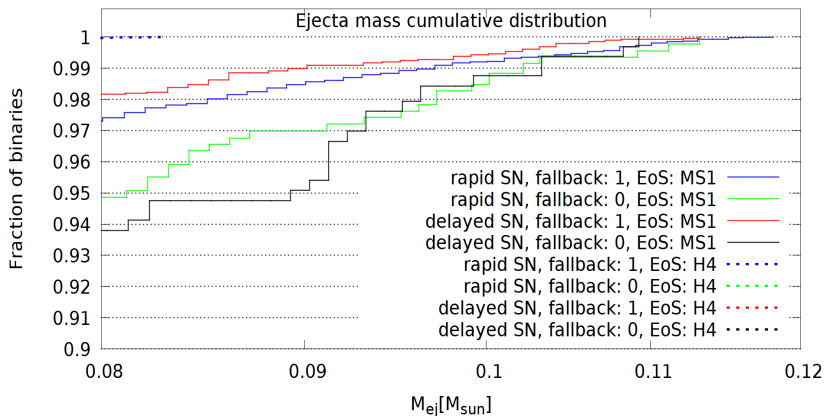


Figure: Ejecta mass (Kawaguchi et al. (2016)), EoS data from Hotokezaka et al. (2013).

Mass ejection



EM counterpart: $< 2.5\%$ brighter than 19.5mag

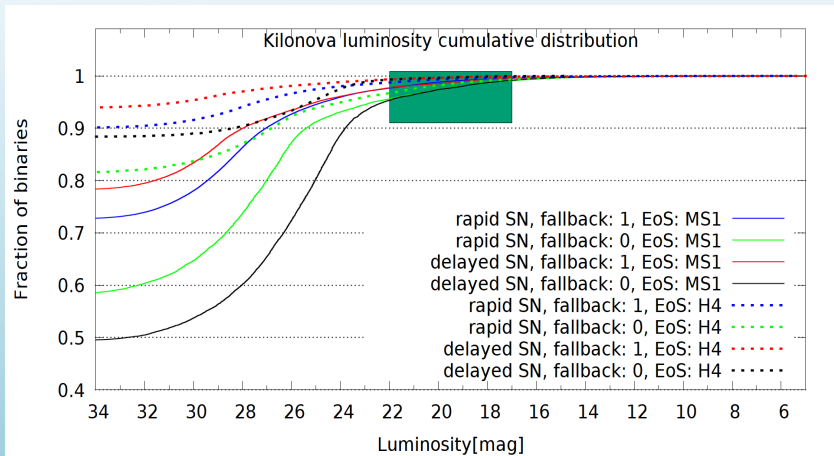


Figure: Kilonova peak luminosity from **Tanaka (2016)**.

EM counterpart: $< 2.5\%$ brighter than 19.5mag

