



Contribution ID: 594

Type: **Talk in the parallel session**

Classical Binary Formation of GW190521

Thursday, 8 July 2021 17:30 (20 minutes)

LIGO/Virgo Collaboration reported the detection of the most massive BH-BH merger up to date with component masses of $85+66$ Msun. Motivated by recent observations of massive stars and employing newly estimated uncertainties on pulsational pair-instability mass-loss we show that it is trivial to form such massive BH-BH mergers through the classical isolated binary evolution (with no assistance from either dynamical interactions or exotica). LIGO/Virgo observations show that the merger rate density of light BH-BH mergers (both components: $M_{\text{BH}} < 50$ Msun) is of the order of tens of mergers per Gpc^3 per yr, while GW190521 indicates that the rate of heavier mergers is $0.02\text{--}0.43 \text{ Gpc}^{-3} \text{ yr}^{-1}$. Our model (with standard assumptions about input physics) but extended to include 200 Msun stars and allowing for the possibility of stellar cores collapsing to 90 Msun BHs produces consistent merger rates, masses and low effective spins for such massive BH-BH mergers. We do not claim that GW190521 was formed by an isolated binary, but it appears that such a possibility can not be excluded.

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Session Classification: Exploring the Black Hole Mass Gap

Track Classification: Black Holes: Theory and Observations/Experiments: Exploring the Black Hole Mass Gap