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## Properties of Dynamically Formed Black Hole Binaries in Globular Clusters

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The first GW source that is confirmed by the advanced LIGO is a binary black hole (BBH). In coming years, advanced LIGO and advanced Virgo will find more BBHs. In this work, we investigate dynamically formed BBHs in core-collapsed globular clusters using direct N-body simulations. We assume two types of BH mass functions: two-component mass function and a continuous mass function (adapted from population synthesis). We find that almost all BHs are ejected from the cluster eventually, and 30 per cent of the ejected BHs are in binaries. In particular, heavier BHs are more likely to form binaries and get ejected as binaries. Some of these ejected BBHs with tight orbital separation can be detected by GW detectors. Therefore, BH mass function inferred from observed samples can be biased toward heavier masses in comparison with the intrinsic BH mass function. We will show results of N-body simulations and discuss dynamics of BBH formation and ejection in cluster environment. Finally, we will comment on the expected BH mass function for GW detectors.

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