

Abstract Submitted  
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**The population of low-mass X-ray binaries ejected from black-hole retaining globular clusters** MATTHEW GIESLER, DREW CLAUSEN, CHRISTIAN OTT, Caltech — The fate of stellar-mass black holes (BHs) formed in globular clusters (GCs) is still widely uncertain; recent studies suggest that GCs may retain a substantial population of BHs, in contrast to the long held belief of a few to zero BHs. We model the population of BH low-mass X-ray binaries (BH-LMXB) ejected from GCs that are representative of Milky Way GCs with variable BH populations. We simulate the formation of BH-binaries in GCs through exchange interactions between binary and single stars in the company of tens to hundreds of BHs. We construct Monte Carlo realizations of the present day BH-LMXB population that account for both the binary evolution of the ejected systems and the dynamical evolution of these binaries in the Milky Way potential. We find that the orbital parameters of the ejected binaries are sensitive to both the GC's observable structural parameters and its unobservable BH population. Our results suggest that these dynamically formed BH-LMXBs will be easily distinguishable, by their distinctive kinematic properties and larger BH masses, from those produced in the field. Identifying this population of BH-LMXBs, an ideal observable proxy for elusive single BHs, would provide observational constraints on the GC BH retention fraction.

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