

## **Black holes binaries from globular clusters as sources of gravitational waves**

*Sunday 9 September 2018 11:30 (20 minutes)*

The direct detection of gravitational waves from binary black hole mergers by the advanced Laser Interferometer Gravitational-Wave Observatories has ushered astrophysics into a new era of observing cosmic events that were previously invisible. Using results for around two thousand star cluster models simulated using well-tested the MOCCA Monte Carlo code for star cluster evolution we determine the astrophysical properties and local merger rate densities for coalescing binary black holes (BBHs) originating from globular clusters. We extracted information for all coalescing BBHs that escape clusters and subsequently merge within Hubble time along with BBHs that are retained in our GC models and merge inside the cluster via gravitational wave (GW) emission or collide. By obtaining results from a substantial number of realistic star cluster models that cover different initial parameters (masses, metallicities, densities etc), we have an extremely large statistical sample of BBHs that merge within Hubble time. In my talk I will discuss the importance of BBH mergers originating from GC for gravitational wave observations.

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