

Transmuted black holes and neutrinos from gravitational wave sources

Thursday, 15 July 2021 14:40 (25 minutes)

My talk will be composed of two parts. During the first part, I will be talking about formation of transmuted black holes via particle dark matter accumulation in compact stars. Stellar objects catastrophically accrete non-annihilating dark matter, and the small dark core subsequently collapses, eating up the host star and transmuting it into a black hole. The wide range of allowed dark matter masses allows a smaller effective Chandrasekhar limit and thus smaller mass black holes. We point out several avenues to test our proposal, focusing on the redshift dependence of the merger rate. We show that redshift dependence of the merger rate can be used as a probe of the transmuted origin of low mass black holes. During the second part of the talk, I will briefly talk about the search of neutrinos from various gravitational wave sources: binary neutron star merger and neutron star - black hole merger.

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Session Classification: Astrophysical Sources