

Constraining the formation and evolution of massive black holes with gravitational wave and electromagnetic observations

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Résumé

Different scenarios for the formation and evolution of massive black holes lead to different predictions for the population of massive black holes in the Universe. By reverse engineering the problem, we can use gravitational wave and electromagnetic observations to understand how these objects form and evolve. In this talk, I will present a parametric model for the evolution of massive black holes and use it to discuss the implications of recent PTA and JWST observations on the formation pathways of massive black holes. I will also comment on LISA perspectives for distinguishing between different formation scenarios.