

# Are Supermassive Stars in Primordial Halos a Source of Observable Gravitational Waves?

*Monday, August 19, 2024 2:35 PM (10 minutes)*

This summer, I've been working on modifying Holodeck, a public python "Massive Black-Hole Binary Population Synthesis for Gravitational Wave Calculations", in order to explore a new formation channel of supermassive black holes. Classically, supermassive black holes form from the multiple galaxy mergers and the merger of the black holes in their center. This "exotic" formation channel starts with population-III stars, which collapse to become intermediate mass black holes. When those form binaries and merge, they would become supermassive black holes.

The broader goal of this project is to know what the gravitational waves from such mergers would look like in order to know if LISA would be able to detect them, and if yes, what they would look like.

## What area of study best describes your talk?

Physics

## If you answered 'Other', please provide the study area.

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