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国台学术报告 NAOC COLLOQUIUM

2019 年第 27 次 / No. 27 2019

Time: **Wednesday 2:30 PM, Dec. 11th** Location: **A601, NAOC**

The Origin of Massive Gravitational Wave Source

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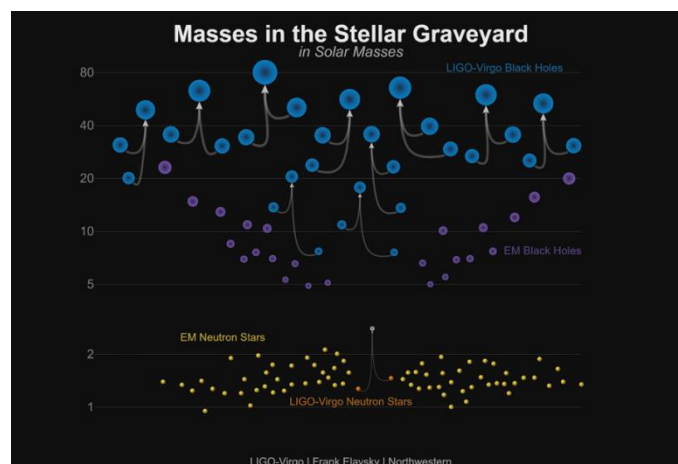


Dr. Xian Chen received his PhD from Peking University, and later moved on to the Kavli Institute for Astronomy and Astrophysics in Peking University, the Max-Planck Institute for Gravitational Physics in Germany, and the Pontificia Universidad Catolica de Chile for postdocs. In 2016 he came back to China and joined the Astronomy Department of Peking University as an assistant professor. Dr. Chen's research mainly focuses on relativistic dynamics and radiation processes. His recent work tackles the problems related to precision gravitational-wave astronomy.

Abstract

Gravitational waves (GWs) encode important information about the physical parameters of the source, such as mass and distance. For binary black holes (BBHs), the templates that are used to retrieve the physical parameters normally are developed under the assumption of a vacuum environment. However, theories suggest that astrophysical BBHs could form in dense stellar clusters or in gas-rich environments.

In this talk, I will show how these factors could distort the chirp signal of a stellar-mass BBH and lead to a misinterpretation of the true mass and distance of the source. The results also imply that with a more careful treatment of the environmental factors, we can probe the immediate surroundings of black holes using GWs.



All are welcome ; Tea and coffee will be served at 2:15 PM.