

Abstract

引力波与宇宙学实验室 讲座预告



From gravitational lensing to plasma lensing

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Xinzhong Er got his bachelor from USTC in 2005, and PhD from Bonn University in 2010. Then he worked in NAOC, Beijing, Observatory of Roma, INAF and SWIFAR Yunnan University until 2024. He moves to Tianjin Normal Univ. by the end of 2024. His



main research interesting is cosmology, in particular using gravitat -ional lensing to study the dark universe. Recently, he also studies the deflections of radio signal by plasma.

Gravitational lensing is a useful probe in study the dark universe. Besides the gravity, the free electrons in the plasma can also cause deflections of the light. Plasma lensing shares several mathematical descriptions with gravitational lensing, it also introduces additional features, such as wavelength dependence, diverging deflection etc. I will briefly introduce the basic phenomenon of plasma lensing and the lensing effects, such as the magnification and time delay in the plasma lensing. It shows some potential interesting applications in the study of radio source, i.e. QSO and FRB as well as the interstellar and intergalactic medium. For example, plasma lensing may introduce magnification bias to the distance radio sources.

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