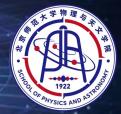


引力波与宇宙学实验室 讲座预告



Angular correlation and deformed Hellings-Downs curve from spin-2 ultralight dark matter

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张云龙,中科院国家天文台引力波天体物理团组研究员。2009年获兰州大学理学学士,2014年获中国科学院理论物理所理学博士,先后在台湾大学和韩国亚太理论物理中心从事博士后研究。2018年任京都大学汤川基础物理所JSPS特别研究员,2020年入职国家天文台工作。主要从事引力理论和宇宙学方面的研究,包括黑洞物理和引力波、超轻暗物质和流体动力学等。



The pulsar timings are sensitive to both the nanohertz gravitational-wave background and the oscillation of ultralight dark matter. The Hellings-Downs angular correlation curve provides a criterion to search for stochastic gravitational-wave backgrounds at nanohertz via pulsar timing arrays. We study the angular correlation of the timing residuals induced by the spin-2 ultralight dark matter, which differs from the usual Hellings-Downs correlation. At a typical frequency, we show that the spin-2 ultralight dark matter can give rise to the deformation of the Hellings-Downs correlation curve induced by the stochastic gravitational wave background.

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