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Unveiling topological phenomena at defects using metamaterials

By

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Abstract:

A Topological phenomena have been a focus of materials research where the key effects emerge at systems' edge boundaries. Recently, with novel metamaterials, the study of topological phenomena was extended to defects. In this talk, I show via two examples that defects, with their rich structures, can induce unique topological phenomena that have never been seen before. I also review briefly other important findings in this direction. Considering the ubiquitous existence of defects in materials, it is believed that these discoveries open a new research frontier in materials science and applications.

References:

1. Liu, Leung, Li, Lin, Tao, Poo*, Jiang*, *Nature* **589**, 381-385 (2021).
2. Lin, Wu*, Jiang, Liu, Wu, Li*, Jiang*, *Nature Materials* **21**, 430-437 (2022).
3. Lin, Wang, Liu, Xue, Zhang*, Chong*, Jiang*, *Nature Review Physics* (2023).

Biography

Prof. Jian-Hua Jiang obtained Ph.D. degree in physics at University of Science and Technology of China. He has received prestigious research grants from National Science Foundation of China, the Chinese Academy of Sciences, and the Ministry of Science and Technology, including the Distinguished Young Scientist Funding of NSFC. He is now a Tier-II full professor at the University of Science and Technology of China. Jian-Hua has worked on a number of topics in materials science including spintronics, photonics, renewable energy, and phononics. His recent works focus on metamaterials, especially on topological and non-Hermitian effects as well as renewable energy and photonic biosensors. His works on these topics attracted lots of attention.



ALL ARE WELCOME

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