



香 港 大 學

THE UNIVERSITY OF HONG KONG

Dr. ZHANG Shizhong
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Biography

Dr. ZHANG Shizhong is currently an assistant professor of the Department of Physics at the University of Hong Kong. He graduated from Tsinghua University in 2003, and received his PhD degree in physics from the University of Illinois at Urbana-Champaign in 2009. He joined the University of Hong Kong in August 2012.

His main area of research is the physics of cold atomic gases, which explores the quantum behavior of interacting particles at extremely low temperatures. Cold atom physics is a new interdisciplinary field that has inherited precision measurement and control from atomic physics, and has used it to simulate and study other complicated material and physical processes. Currently, his research focuses on the transport properties of such cold atomic gases and their possible implications for our understanding of high-temperature superconductors. In addition, Dr. Zhang is also interested in using the cold atom approach as a model system to simulate physics of complicated materials (e.g., topological semimetals).



His most representative work at HKU is on the minimal spin diffusivity in the so-called unitary Fermi gas, a system that interacts as strongly as quantum mechanics allows. In collaboration with his experimental colleagues at the University of Toronto in Canada, he offered theoretical predictions and explanations of the experimental results that have deepened our understanding of transport properties of the strongly interacting Fermi system. He also works on other topics in cold atomic gases, such as spin-orbit coupling and topological states.

Dr. Zhang is a theoretical physicist whose main interests lie in the collective behavior of strongly interacting many-particle systems. When the interactions become strong, there are very few tools available to theorists. The long-term goal of Dr. Zhang's research is to devise a new theoretical framework which can tackle these complicated problems. He has established close collaborations with experimentalists in Hong Kong and overseas, and has obtained results of international recognition.

Awards

2015 Croucher Innovation Award
 The Croucher Foundation Hong Kong