

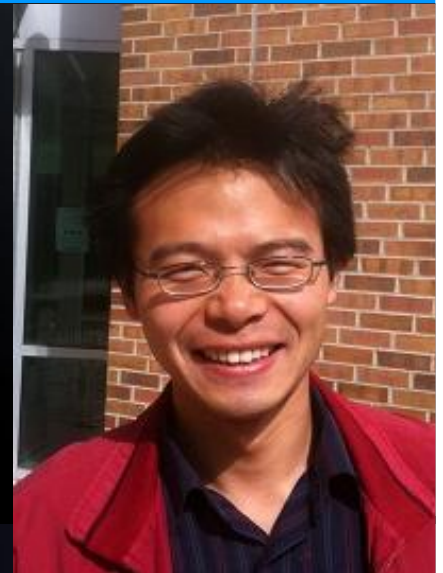
武汉物数所理论交叉学术交流系列报告 (第八十七期)

Spin-orbit Coupled Bosons in One-dimensional Optical Lattice: Quantum Phases and Their Properties

Shizhong Zhang (张世忠) A/professor
Department of Physics, The University of Hong Kong
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频标楼4楼报告厅

About the speaker:

Shizhong Zhang obtained his Ph.D from University of Illinois at Urbana-Champaign in 2009. After three years of postdoctoral training at the Ohio-State University, he joined the department of physics at university of Hong Kong. His research focus on the physics of ultracold atomic gases and recently has been interested in the transport properties in the strongly interacting Fermi gases. He also works on the strongly correlated electron system, in particular, high temperature superconductors.



Abstract:

In this talk, I discuss various quantum phases realized in an one-dimensional optical lattice with spin-orbit coupled quantum gases. We determine the strong coupling magnetic phase diagram by a combination of exact analytic and numerical means. Smooth evolution of the magnetic structure into the superfluid phases are investigated with the density matrix renormalization group technique. Novel magnetic phases are uncovered and we discuss in detail the phase transitions between them.

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