

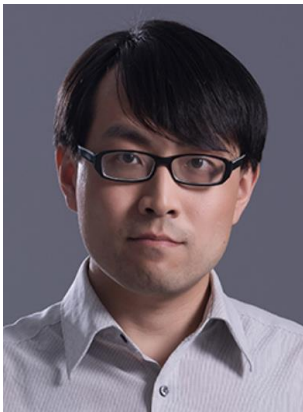


Seminar

Pseudo-criticality and its implication for the lost conformality

Wei ZHU

Westlake University



Time: 1:30 pm, June. 14, 2024 (Friday)

时间: 2024年6月14日 (周五) 下午1:30

Venue: Room w563, Physics building, Peking University

地点: 北京大学物理楼, 西563会议室

Abstract

This talk will introduce the concept of “pseudo-criticality” and discuss its implication for phase transition theories. We will elucidate the pseudo-criticality is instrumental in unraveling the mysteries of complex conformal field theories and illuminating a variety of intriguing physical problems, including weakly first-order transitions in statistical mechanics and the conformal window of gauge theories. Moreover, we will discuss the deconfined criticality in $(2+1)d$ —the quantum phase transition between a Néel antiferromagnet and a valence-bond solid—may actually be pseudocritical, in the sense that it is a weakly first-order transition with a generically long correlation length.

About the speaker

Dr. Wei ZHU received his B.S. in applied physics (2007) and Ph.D. degree in physics (2012), both from University of Science and Technology of China. He performed post-doctoral research at California State University Northridge, Princeton University and Los Alamos National Lab. In 2018 he joined the Westlake University as an Assistant Professor. Dr. Zhu's research focuses on quantum mechanical aspects of condensed matter systems in the areas of strongly-correlated and mesoscopic physics.