



復旦大學

Fudan University



## 复旦大学物理系物质科学报告

### Physics Department Colloquium

# Spontaneous translation symmetry breaking in a doped Mott insulator

**Prof. Zheng-Yu Weng**

*Tsinghua University*

**Abstract:** Based on analytic analyses and numerical simulations, I will show that the translational symmetry of the charge degree of freedom must be generally broken spontaneously in a Mott insulator upon doping. I will also discuss the limits where such a symmetry may get restored, which include the case involving pairing of doped holes, the limit that the short-range antiferromagnetic correlation gets severely diminished, or some cases where the spin rotational symmetry becomes broken. The broken translational symmetry of charge is shown to be tied to the intrinsic Mott physics, which may be closely related to the anomalous phenomenon of the high- $T_c$  cuprate superconductor.

**Time: 2:00pm, Tuesday, May 23, 2017**

**Location: Physics Building, Room 221B**

**(Cookies and coffee are served from 1:30 pm)**