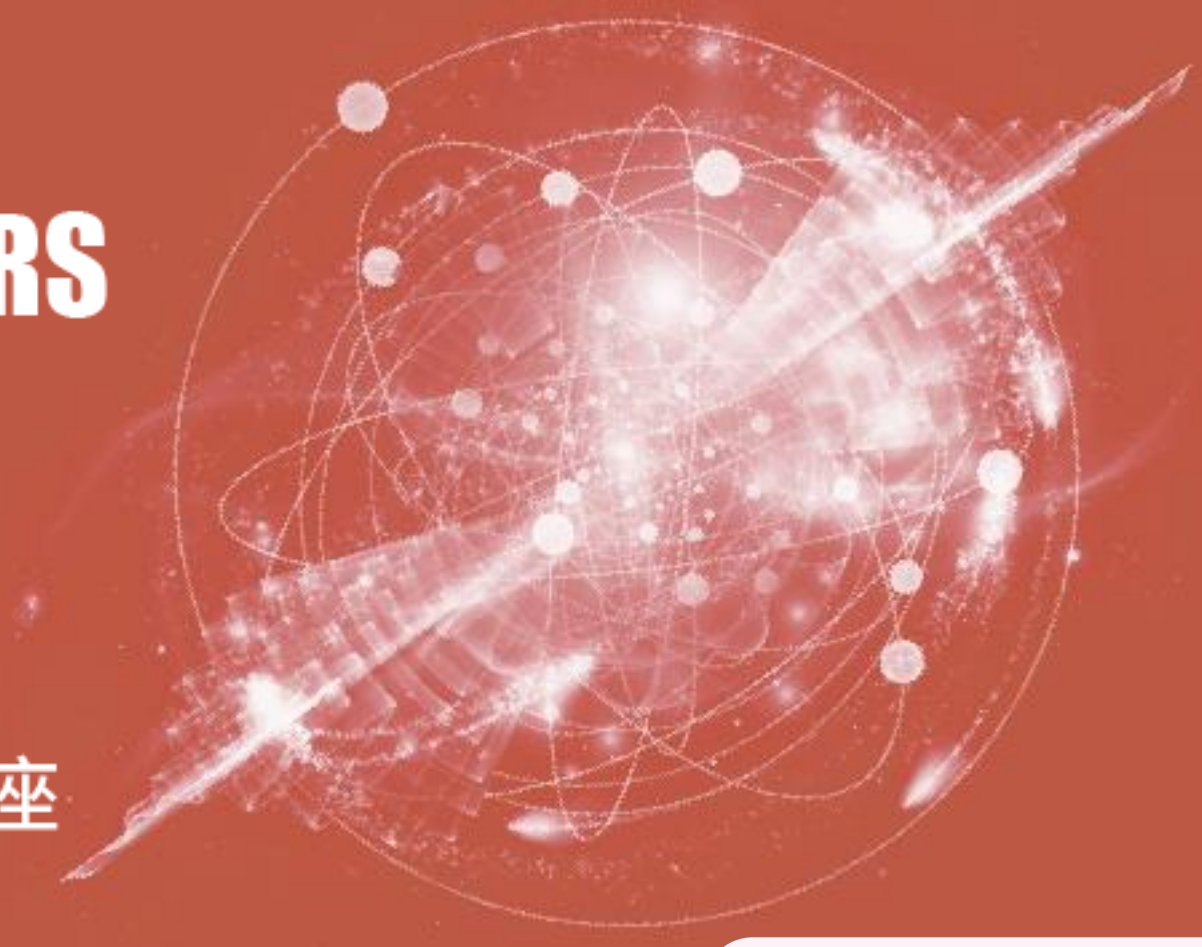
LECTURES ON FRONTIERS OF QUANTUM MATTERS

量子物质前沿讲座



清華大學
Tsinghua University

TITLE |

Aspects of the Complex SYK Model

SPEAKER |

Yingfei Gu (Harvard University)

TIME |
3:00-4:30 Dec 24, 25, 26, 2019

VENUE |
Room 322, Science Building
Tsinghua University

主办方：清华大学高等研究院

ABSTRACT

The SYK model is a quantum system with many Majorana fermions and random all-to-all interactions. Promoting the Majorana fermions to the complex fermions with a global U(1) symmetry is a simple and fun exercise. I would like to explain a generalized definition of charge for the bilocal action of the complex SYK model following Noether's procedure, and compute its universal relation to the infrared asymmetry of the Green function. The same relation can be obtained by a renormalization theory. In the end, I will also present a two dimensional bulk picture with free Dirac fermion for the zero temperature entropy.

The lectures are based on arXiv: 1910.14099 (Yingfei Gu, Alexei Kitaev, Subir Sachdev, and Grigory Tarnopolsky)