



The Institute of Mathematical Sciences  
The Chinese University of Hong Kong

For Favour of Posting

數學科學研究所  
香港中文大學

Phone: (852) 3943 8038 • Email: [ims@ims.cuhk.edu.hk](mailto:ims@ims.cuhk.edu.hk)  
Unit 601, 6/F., Academic Building No. 1, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

# *Joint Harvard-CUHK-YMSC Differential Geometry Seminar*

## **Elliptic chiral homology and chiral index**

Abstract: We present an effective quantization theory for chiral deformation of two dimensional conformal field theories. We explain a connection between the quantum master equation and the chiral homology for vertex operator algebras. As an application, we construct correlation functions of the curved beta-gamma/b-c system and establish a coupled equation relating to chiral homology groups of chiral differential operators. This can be viewed as the vertex algebra analogue of the trace map in algebraic index theory. The talk is based on the recent work arXiv:2112.14572 [math.QA].

By

**Professor Si LI**

Yau Mathematics Science Center  
Tsinghua University

<b>Date:</b>	<b>March 30, 2022 (Wednesday)</b>
<b>Time:</b>	<b>9:30am – 10:30am (Hong Kong Time)</b>
<b>Zoom Link:</b>	<b><a href="https://cuhk.zoom.us/j/99612299554">https://cuhk.zoom.us/j/99612299554</a></b> <b>(Meeting ID: 996 1229 9554; Passcode: 20220330)</b>

*All are Welcome*