



Department of Mathematics  
The Chinese University of Hong Kong

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數學系  
香港中文大學

Phone: (852) 3943 7988-9 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk  
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

# Representation and Number Theory Seminar

## *Standard Poisson Structure on Grassmannian and Its Deformation*

by

***Professor Zheng HUA***  
***The University of Hong Kong***

### Abstract

Yakimov and Goodearl proved that the torus orbits of symplectic leaves of complex Grassmannian (more generally partial flag varieties of  $G = GL_n(\mathbb{C})$ ) with respect to the standard Poisson structure are exactly Lusztig strata, therefore relates the study of Lusztig total positivity to Poisson geometry. I will provide an algebraic geometric perspective of Lusztig strata. It turns out that both the standard Poisson structure and the Lusztig strata admits a deformation whose parameter space is given by a family of elliptic curves degenerating to Kodaira  $E_n$  fiber. The key tool is our construction of modular Poisson structure on moduli space of complexes on Gorenstein Calabi-Yau curves. This is a joint work with Sasha Polishchuk.

Date	: 21 February 2023 (Tuesday)
Time	: 4:00pm – 5:00pm
Venue	: Room 219, Lady Shaw Building, CUHK

*All are Welcome*