



# Representation Theory Seminar

## Informal seminar on canonical basis

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### Abstract

This is a learning seminar on the canonical basis.

1. A brief introduction to quantum groups, and the algebraic construction for canonical bases on quantum groups and their modules.  
Reference: Lusztig's book "Introduction to quantum groups".
2. The geometric realization for type A quantum groups and canonical bases using flag varieties.  
Reference: Beilinson, Lusztig and MacPherson's paper "A geometric setting for the quantum deformation of  $GL_n$ ".
3. An introduction to the total positivity and its connection with canonical bases.  
Reference: Lusztig's paper "Total positivity in reductive groups".

Date:	September 12, 2023 (Tuesday) September 19, 2023 (Tuesday) October 10, 2023 (Tuesday)
Time:	1:30 - 4:00pm
Venue:	Room 210, Run Run Shaw Building, HKU

*All are welcome*