

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

## Qualifying Research Seminar

### Positive Structures in Lie Theory

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*(Supervisor: Professor X. He)*

May 17, 2024 (Friday) at 11:00 am

Rm 210, Run Run Shaw Building, HKU

#### Abstract

A real matrix is called totally positive if all the minors are positive. This notion dates back to Schoenberg and to Gantmacher-Krein in the 1930's. In 1994, Lusztig developed the theory of total positivity for arbitrary split real reductive group. Since then, the study on total positivity has investigated many beautiful algebraic, geometric, combinatorial structures, and inspired such diverse areas as cluster algebra, higher Teichmuller theory, and the theory of amplituhedron. In this talk, I will summarize some recent results in total positivity and related subjects. After that, I will propose some future research problems.

*All are welcome*