

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Andrew N W Hone**

( *University of Kent at Canterbury, UK* )

报告题目:

**Cluster algebras and integrable  
maps (II)**

邀请人: 胡星标 研究员

报告时间: **2017 年 4 月 6 日 (周四)**

**下午 16:30-17:30**

报告地点: 数学院南楼七层

**714 教室**

# **Abstract:**

In this talk, I will talk about

- 1) **Background and examples of cluster algebras: Somos sequences in number theory; Laurent property; Abel pentagon identity, Lyness map and the dilogarithm; Zamolodchikov Y-systems; Plucker coordinates in Grassmannians; discrete Hirota equations.**
- 2) **Cluster algebras without coefficients: quivers and quiver mutation; exchange matrices and matrix mutation; cluster variables and cluster mutation.**
- 3) **Poisson and symplectic structures: Poisson brackets; symplectic forms; Gekhtman-Shapiro-Vainshtein Poisson structure for cluster algebras; examples of noninvariant symplectic leaves; compatible presymplectic forms and reduction to symplectic coordinates.**
- 4) **Cluster mutation-periodicity: Mutation-periodic quivers; Fordy & Marsh classification of period 1 and recurrence relations; primitives and affine Dynkin diagrams; Dodgson condensation; linear relations for cluster variables.**
- 5) **Tropical relations and algebraic entropy: Growth of denominators; max-plus tropical algebra; dynamics of tropical maps; algebraic entropy; experimental classification.**
- 6) **Discrete integrable systems: Affine A-type cluster algebras and dressing chain - monodromy matrix and Lenard-Magri chain; discrete Hirota and reduction to Somos/Gale-Robinson; connection with QRT maps.**

**欢迎大家参加！**