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**

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报告题目：

Cluster algebras and integrable maps （I）

邀请人：　胡星标 研究员

报告时间：**2017 年 4 月 6 日（周四）**

**　　　　　下午 15:30-16:30**

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; Pl•ucker coordinates in Grassmanians; discrete Hirota equations.

2) Cluster algebras without coecients: 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 classifcation 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！