Integrability and entropy in cluster maps

Andrew N. W. Hone, University of Kent

We explain how symplectic maps natural arise from cluster algebras defined by quivers with a certain mutation periodicity property which was introduced recently by Fordy and Marsh. Many famous recurrences arise in this way, in particular the Somos-4 recurrence which also appeared in the hard hexagon model of statistical mechanics. We describe what it means for these maps to be integrable, and present a classification of them based on the notion of algebraic entropy.