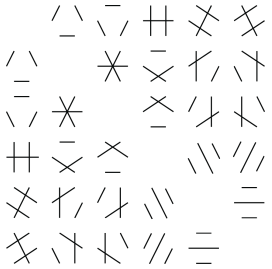
Mathematics Seminar



Rocky Mountain Algebraic Combinatorics Seminar

Monodromy and K-theory of Schubert Curves via Generalized Jeu de Taquin

Maria Monks Gillespie
University Of California, Berkeley

Schubert curves are the spaces of solutions to certain one-dimensional Schubert problems involving flags osculating the rational normal curve. The real locus of a Schubert curve is known to be a natural covering space of RP^1, so its real geometry is fully characterized by the monodromy of the cover. It is also possible, using K-theoretic Schubert calculus, to relate the real locus to the overall (complex) Riemann surface.

The monodromy operator turns out to be the commutator of jeu de taquin rectification and promotion on certain skew Young tableaux. We give a new local algorithm for computing this commutator, and use it to provide purely combinatorial proofs of some of the connections to K-theory. If time permits, we will also describe some of the geometric consequences of our combinatorial results. This is joint work with Jake Levinson.

Automorphisms of generalized Sylvester Hadamard matrices

Dane Flannery
National University of Ireland, Galway

Cocyclic development of pairwise combinatorial designs was discovered by Warwick de Launey and Kathy Horadam in the early 1990s. We first recount some algebraic essentials of the theory. Building on this, we proceed to discuss recent new results about the cocyclic development of a certain infinite family of generalized Hadamard matrices (which contain the Sylvester Hadamard matrix family as a special case). Specifically, we characterise the 'indexing groups' of the matrices considered as cocyclic designs. Many open questions remain; we mention some of these. This is joint work with Ronan Egan (also at National University of Ireland, Galway).

Weber 223
4–6 pm
Friday, December 4, 2015
(Refreshments in Weber 117, 3:30–4 pm)
Colorado State University

This is a joint Denver U / UC Boulder / UC Denver / U of Wyoming / CSU seminar that meets biweekly.
Anyone interested is welcome to join us at a local restaurant for dinner after the talks.

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