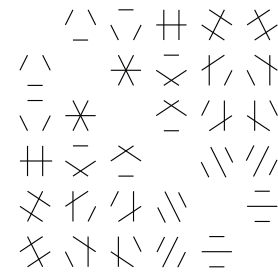


Mathematics Seminar



Rocky Mountain Algebraic Combinatorics Seminar

John Jasper
Air Force Institute of Technology

It is a well-established phenomenon that optimal packings of points in metric spaces often exhibit large amounts of symmetry. A particularly rich class of optimal packings in complex projective space known as equiangular tight frames (ETFs) are no exception. Indeed, a large family of ETFs known as harmonic ETFs arise as the orbit of a single vector under the action of some abelian group. However, when we look closely at these harmonic ETFs, we often observe that the group that seems to be calling the shots can actually be replaced by a more common combinatorial object. In this talk we will see a couple of instances of this generalization from algebra to combinatorics and how these generalizations greatly enrich the theory of ETFs.

New strongly regular graphs from optimal line packings

John Jasper
Air Force Institute of Technology

In this talk, we'll explore several new constructions of strongly regular graphs. Specifically, we will show how some known optimal line packings can be coerced into generating new families of SRGs. We will also introduce a new construction of optimal line packings, yielding additional infinite families of SRGs.

Weber 223
4–6 pm, Friday, March 22, 2024
(Refreshments 3:30–4 pm)
Colorado State University
4 pm, Friday, March 22, 2024

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



Department of Mathematics
Fort Collins, Colorado 80523