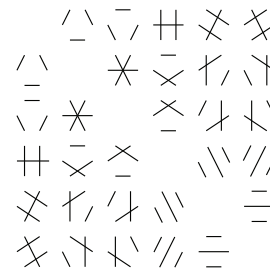


Mathematics Seminar



Rocky Mountain Algebraic Combinatorics Seminar

Borsuk-Ulam theorems into higher-dimensional codomains

Henry Adams
Colorado State University

I will describe Borsuk-Ulam theorems into higher-dimensional codomains. One formulation of the Borsuk-Ulam theorem is that any odd map from the n -dimensional sphere into Euclidean space \mathbb{R}^n hits the origin. We generalize this result by increasing the dimension of the codomain, and by finding a small-diameter subset of the sphere whose image contains the origin in its convex hull. For example, given an odd map from the circle into \mathbb{R}^{2k+1} , there is some subset of the circle of diameter at most $\frac{2\pi k}{2k+1}$ whose image contains the origin in its convex hull, and this diameter bound is sharp. We will pose open questions for the n -sphere, where optimal diameters are known only for odd maps of the n -sphere into \mathbb{R}^{n+1} and \mathbb{R}^{n+2} , and relate these questions to Schur polynomials. Joint work with Johnathan Bush and Florian Frick.

Online via Zoom

<https://zoom.us/j/99764124299?pwd=YXZXdkcvQjB2RnFHwWtjUXRyUTF0UT09>

4 pm, Friday, May 29, 2020

Get together online starting at 3:30 pm

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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