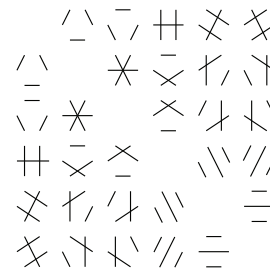# Mathematics Seminar

Rocky Mountain Algebraic Combinatorics Seminar

On Characterizing which Submatrices of DFTs are Full Spark

Harley Meade

Colorado State University

Equiangular tight frames (ETFs) are potentially redundant generalizations of orthonormal bases. ETFs are used in signal processing and data analysis, and the redundancy allows for such frames to be robust to erasures. Full spark frames, which are maximally robust to erasures, correspond to uniform matroids, and we can use the matroidal and other combinatorial properties of frames to investigate their spark. In this talk, we will examine a certain class of ETFs, namely those formed by extracting rows of the Kronecker product of discrete Fourier transform (DFT) matrices. By determining which sets of such rows do not form full spark frames, we hope to eventually characterize the sets of rows that do.

Online via Zoom

`https://zoom.us/j/95321487441?pwd=Tlp4VG9pejZCekJmeDFFb1BzeWpsdz09`, Meeting ID: 953 2148 7441, Passcode: 722523

4 pm, Friday, May 7, 2021

Talk part 1, 4.10-4.40,

Break 4.40-5.10 at `https://gather.town/HQmdvgyabpEL4qpB/RMAC`,

Talk part 2 5:10-5:40

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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