

COLLOQUIUM

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On the Principal Rank Characteristic Sequence

The logo for Mathematics and Statistics features a large orange circle in the center. Inside the circle, the words "Mathematics" and "Statistics" are stacked vertically in a bold, black, sans-serif font. The circle is set against a background of four blue squares, two in the top row and two in the bottom row, arranged in a 2x2 grid pattern.

**Mathematics
and
Statistics**

Date: September 19
Time: 3:30 - 4:30 PM
Room: RIC 209

Abstract: Inverse problems in matrix theory have long been a source of interest, and continue to produce many interesting advances and applications. For instance, the principal minor assignment problem asks: Given a real vector u in \mathbb{R}^{2^n} , when does there exist an $n \times n$ real matrix A so that all of the 2^n principal minors of A can be assembled into u ? A variation on this problem is to consider the principal rank characteristic sequence of a real symmetric matrix.

In this talk, I will introduce the principal rank characteristic sequence, survey many of its basic properties, discuss the subtle differences across various fields, and will close by highlighting some new results on a recent extension of this characteristic vector for symmetric matrices.