AHMAD MOKHTAR, Simon Fraser University
Connectedness of Fano schemes of matrices of bounded rank

Fano schemes are fine moduli spaces that parameterize linear spaces contained in an embedded projective variety. The study of Fano schemes of matrices with bounded rank provides a geometric approach to the classical problem of classifying spaces of matrices with rank conditions. In this talk, I will present a complete combinatorial classification of the connectedness of Fano schemes of matrices with bounded rank. Our approach will treat rectangular, symmetric, and alternating matrices simultaneously. Furthermore, I will characterize the irreducibility of these Fano schemes in the case of symmetric matrices and propose a conjecture for the alternating case.