Channel Islands
CALIFORNIA STATE UNIVERSITY

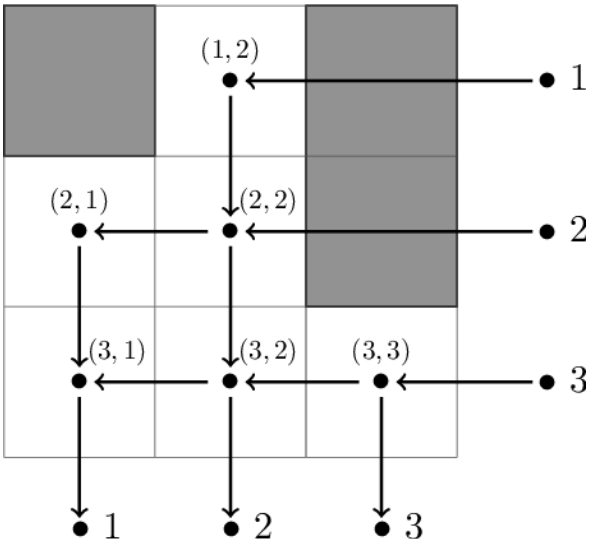
California State University
INSTRUCTIONALLY RELATED ACTIVITIES
CHANNEL ISLANDS

Graduate Mathematics Seminar

From Quantum Matrices to Totally Nonnegative Matrices

Dr. Karel Casteels

UC Santa Barbara



Abstract: The term “quantum matrices” is short for the "quantized coordinate ring of m x n matrices", a certain algebra in noncommuting generators satisfying a given set of relations depending on a parameter q so that when q=1, one recovers the classical coordinate ring of m x n matrices. On the other hand, an m x n real matrix is “totally nonnegative (TN) if it has the property that every minor is nonnegative. It was recently noticed that certain partitions of the set of all m x n TN matrices match nicely with partitions of special prime ideals of quantum matrices. In my talk I will discuss the connection between these two partitions which is based on examining collections of nonintersecting paths in a certain graph. Time permitting, I will talk about applications to UL factorization of TN matrices.

When: Monday, November 18, 2019, 6:00 – 7:00 pm
Where: CSUCI, Sierra Hall 2411