

COLLOQUIUM

Eventual positive, eventually nonnegative, and eventually cyclic matrices

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Abstract

A real square matrix A is eventually positive (respectively, eventually nonnegative) if there exists a positive integer k_0 such that for all $k \geq k_0$, $A^k > 0$ (respectively, $A^k \geq 0$), where these inequalities are entrywise. Eventually positive matrices exhibit the Perron-Frobenius structure of positive matrices, whereas eventually nonnegative matrices do not (for example, a nilpotent matrix is eventually nonnegative). This talk will provide an introduction to Perron-Frobenius theory and eventually positive matrices, and will describe recent results concerning strongly eventually nonnegative matrices, which exhibit some Perron-Frobenius structure and are either eventually r -cyclic or eventually positive.

Date: Monday, February 28, 2011

Time: 10:00-11:00 AM

Room: C-210