

Coefficientwise total positivity of some matrices defined by linear recurrences

03.04**Tomack Gilmore***(Lancaster University)***Time:** Wednesday 06.07., 12:00 – 12:25

Abstract: In this talk I will present some recent results and conjectures concerning the coefficientwise total positivity of a certain lower-triangular matrix with polynomial entries (in six indeterminates) that satisfy a three-term linear recurrence. This matrix is of particular interest since it includes, as special cases, a number of combinatorially significant integer matrices such as the Eulerian triangle and the reversed Stirling subset triangle. The former was conjectured to be totally positive over a quarter of a century ago by Brenti (this, unfortunately, remains a conjecture), while the latter can be shown to be totally positive by specialising one of our results. This is joint work with Xi Chen, Bishal Deb, Alex Dyachenko, and Alan Sokal.