

1123-05-285

Franco V Saliola* (saliola.franco@uqam.ca). *Combinatorial representation theory and random-to-random shuffles.*

Pick a card—any card!—from the deck, and remove it; then put it back anywhere in the deck. Repeating this process leads to a card shuffling technique known as the random-to-random shuffle. An outstanding open problem is to determine how many of these shuffles are needed to randomize a deck of cards. This is controlled by the spectra of the transition matrices of these shuffles.

The talk will outline how the representation theory of the symmetric group leads to a beautiful recursive structure of the eigenspaces of these transition matrices, which in turn leads to combinatorial statistics for the eigenvalues.

This talk is based on joint work with Ton Dieker. (Received August 29, 2016)