More refined enumerations of alternating sign matrices

MON/P2
15:30–15:50

*Ilse Fischer** (Univ. Wien), *Dan Romik* (The Hebrew University)

Alternating sign matrices are one of those fascinating combinatorial objects that admit an exceptional simple enumeration formula while at the same time proving this formula is rather complicated. They were first defined and studied in the early 1980s by Robbins and Rumsey in connection with Dodgsons condensation method for computing determinants. The research was further stimulated after the discovery of the relation to a statistical mechanics model (six-vertex model) for “square ice”. In the talk I will present new results and conjectures on refined enumerations of alternating sign matrices according to the first two rows, and, more general, on refined enumerations of alternating sign matrices according to the first d rows.