Stable character theory and representation stability.

Abstract:

Various algebraic and topological situations give rise to compatible sequences of representations of different groups, such as the symmetric groups, with stable asymptotic behavior. Representation stability is a recent approach to studying such sequences, which has proved effective for extracting important invariants. Coming from this point of view, I will introduce the associated character theory, which formally explains many of the approach's strengths (in char 0). Central examples are simultaneous characters of all symmetric groups, or of all GI(n) over some finite field. Their mere existence gives applications to statistics of random matrices over finite fields, and raises many combinatorial questions.