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Edge behavior of the periodic and the free boundary Schur processes

The Schur process is in some sense a discrete analogue of a random matrix. Their edge behavior are known to be in the same universality class, described by the Airy kernel and the Tracy-Widom distribution. In this talk we consider two variants of the Schur process: the periodic case introduced by Borodin, and the "free boundary" case recently introduced by us. We are able to compute their correlation functions in a unified manner using the machinery of free fermions. We then investigate the edge asymptotic behavior and show it corresponds to two nontrivial deformations of the Airy kernel and of the Tracy-Widom distribution. Based on joint work with Dan Betea, Peter Nejjar and Mirjana Vuletić.