

1143-60-487

**Megan McCormick Stone\*** ([mmccormick@math.arizona.edu](mailto:mmccormick@math.arizona.edu)). *Eigenvalue Densities for the Hermitian Two-Matrix Model.*

The two-matrix model consists of pairs of Hermitian matrices equipped with a joint probability distribution. This distribution contains an interaction term which is scaled by a coupling constant,  $\tau$ . A result of Goulden, Guay-Paquet, and Novak provides an expansion for the interaction term in a neighborhood of  $\tau = 0$ . The expansion involves monotone double Hurwitz numbers, which count a collection of ramified coverings of the two-sphere. Using this expansion, and its connection to monotone Hurwitz numbers, this talk provides a variational problem which describes the joint eigenvalue densities for the two-matrix model up to order  $\tau^2$ . (Received August 20, 2018)