The Ginibre ensemble of real random matrices and its scaling limits

Christopher Sinclair
Department of Mathematics
University of Colorado
Campus Box 395
Boulder, CO 80309
USA

`chris.sinclair@colorado.edu`

Abstract

We give a closed form for the correlation functions of ensembles of a class of asymmetric real matrices in terms of the Pfaffian of an anti-symmetric matrix formed from a 2×2 matrix kernel associated to the ensemble. We apply this result to the real Ginibre ensemble and compute the bulk and edge scaling limits of its correlation functions as the size of the matrices becomes large.