Title: Pseudo-Hermiticity in Non-equilibrium Statistical Mechanics

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Abstract:

We consider some of the most fundamental problems in non-equilibrium statistical mechanics and show that their understanding requires pseudo-unitary extensions of random matrix theory. In particular, we demonstrate this by studying (i) the problem of biased random walk on a one- dimensional, disordered lattice, and, (ii) the classic Kac's ring with disorder. In both cases, we study the entropy in their non-equilibrium steady state, the Boltzmann H-function.