

Large N asymptotics in normal matrix models, convergent partition functions and dispersionless hierarchies

John Harnad

Centre de recherches mathématiques

Université de Montréal

C.P. 6128, succ. Centre-ville

Montréal, Québec

CANADA H3C 3J7

Abstract

We consider the relation between the dispersionless 2-Toda hierarchy and the large N limit of normal matrix models with measures chosen to give convergent integrals for the partition function. Conjectured results that have been stated in the literature, but proven only for the Gaussian case, relating the partition function to the corresponding dispersionless tau function, and the flow parameters to the harmonic moments of the support of the eigenvalue domain, are examined for a larger class of convergent measures.