JOHN HARNAD, Concordia University and CRM *Finite Dimensional Tau Functions*

We show how a microcosm of the τ -function approach to the KP hierarchy developed by the Kyoto group, consisting of solutions having a finite number of degrees of freedom, may be studied within the setting of finite dimensional Grassmannnians. This gives both a Grassmannian and fermionic interpretation of the determinantal formula of Gekhtman and Kasman, and makes evident the origin of the "rank-1" condition characterizing finite dimensional reductions. In particular, this includes the well-known cases of polynomial τ -functions, those associated to Calogero-Moser pole dynamics, multisolitions and their degenerations. It also sheds light on the recently introduced notion of "convolution flows". (Based on joint work with F. Balogh and T. Dinis da Fonseca)