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On multilevel Dyson Brownian motions

I will discuss how Dyson Brownian motions describing the evolution of eigenvalues of random matrices can be extended to multilevel Dyson Brownian motions describing the evolution of eigenvalues of minors of random matrices. The construction is based on intertwining relations satisfied by the generators of Dyson Brownian motions of different dimensions. Such results allow to connect general beta random matrix theory to particle systems with local interactions, and to obtain novel results even in the case of classical GOE, GUE and GSE random matrix models. Based on joint work with Vadim Gorin.