

Quantum entanglement in random systems

K. Życzkowski

Jagiellonian University

We analyze quantum entanglement in composite random systems. Due to the measure concentration phenomenon a typical random pure state of a bi-partite system is almost maximally entangled. Taking various measures on the set of pure states one can induce by partial trace various probability measures in the set of mixed states on a reduced system. Recent results on random states generated according to the Bures measure and random graph states, which lead to Marchenko-Pastur or higher order Fuss-Catalan distributions of level density are reviewed.