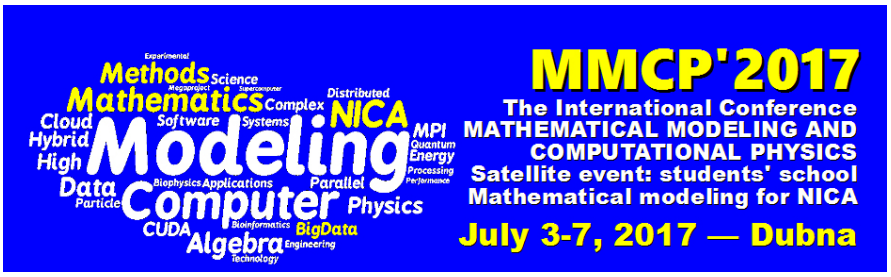

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On the Wigner quasiprobability function for N-level quantum systems

Thursday, 6 July 2017 16:15 (15 minutes)

According to the Stratonovich-Weyl correspondence there is mapping between
operators on the Hilbert space of a finite-dimensional quantum system and functions on the phase space of its classical mechanical counterpart. This map is given by the Wigner quasiprobability distribution and can be implemented with the aid of the Stratonovich–Weyl operator kernel which satisfies a number of lucid physical postulates. In the present report, applying this formulation to a generic N-level quantum system, we propose the k-fold family of Wigner functions defined on the complex flag manifolds F_N^N-k : = U(N)/(U(N-k)×U(k)) with k ≤ [(N-1)/2] and present explicit expressions for kernels of few low-dimensional Wigner function.

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