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**Seminar of the scientific department of computational physics**

**Thursday, 24 January 2019, 15.00**

**Room 310**

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**Algebraic and geometric properties of the state space of  
low-dimensional quantum systems**

The phenomenon of entanglement in composite quantum systems plays a key role in the theory of quantum information and quantum computing. The subject of the seminar is the study of algebraic and geometric properties of low-dimensional quantum systems, essential for the description of quantum correlations.

In the first part of the seminar, the X-states entanglement properties will be analyzed and illustrated for a two-qubit system. A stratification of the state space associated with the adjoint actions of the global and local unitary groups will be given. In accordance with this, separable X-states are divided into families according to the type of degeneracy.

In the second part, a brief overview of the moduli space of the Stratonovich-Weyl kernel of the Wigner function, in its turn classified by orbit dimensions, will be given.