



# ЛАБОРАТОРИЯ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

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**Пятница, 16 ноября 2018 г., в 15.00**  
**Ком. 310**

## **1. Hovik Grigorian**

### **The role of the equation of state in compact star physics and phenomenology**

Compact star physics is in fact a way to study the state of matter under extreme conditions. However, there are no direct experimental or observational methods for investigating the internal structure and content of stellar matter. Therefore, the numerical simulations for the theoretical models of different situations and the presence of tension in explanations of observational data on compact stars are very important. The equation of state of a high-density substance made it possible to raise the question of the possibility of exotic states of matter, such as the quark plasma. These aspects are in the focus of research on the structure and evolution of stars, which is the main content of the phenomenology.

## **2. V.S. Abgaryan**

### **Studies of Wigner Quasi-probability Distribution Functions**

In seminar the results concerning construction as well as further perspectives of investigation of Wigner quasi-probability distribution function for general N-level quantum system are going to be presented.

Based on the Stratonovich-Weyl correspondence a method of construction of the unitary nonequivalent Wigner quasiprobability distributions for a generic N-level quantum system has been proposed. The mapping between the operators on the Hilbert space and the functions on the phase space is implemented by the Stratonovich-Weyl operator kernel. The algebraic “master equation” for the Stratonovich-Weyl kernel is derived. We plan on investigating negativity of the Wigner function as indicator of quantum correlations (resources for quantum computing), by means of large scale computations.