



Семинар

«МАЛОЧАСТИЧНЫЕ СИСТЕМЫ»

вторник, 14 апреля 2015 г., 11:00
аудитория им. Д.И.Блохинцева (IV этаж)

1. **О.И. Kartavtsev (DLNP), А.В. Malykh (BLTP)**

UNIVERSAL DESCRIPTION OF ROTATIONAL-VIBRATIONAL SPECTRUM OF THREE TWO-COMPONENT PARTICLES WITH CONTACT INTERACTIONS

The rotational-vibrational spectrum for two non-interacting identical particles of mass m and a distinct particle of mass m_1 with zero-range interaction between different particles is studied. One considers the even total angular momentum L and positive parity if identical particles are bosons and the odd L and negative parity if identical particles are fermions. It was shown, that an additional three-body parameter b should be introduced for mass ratio $\mu_r(L) \leq m/m_1 \leq \mu_c(L)$ ($\mu_r \approx 8.619$ and $\mu_c \approx 13.607$ for $L = 1$, $\mu_r \approx 32.948$ and $\mu_c \approx 38.630$ for $L = 2$, etc.). In the present report the three-body energies of two-component particles for an arbitrary three-body parameter b and mass ratio in the interval $\mu_r(L) \leq m/m_1 \leq \mu_c(L)$ are calculated. In particular, for some L^P sectors a number of three-body bound states is presented in the form of a "phase" diagram in the plane of parameters m/m_1 and b .

2. **А.К. Motovilov (BLTP)**

BOUNDS ON ROTATION OF THE SPECTRAL SUBSPACES OF A FEW-BODY HAMILTONIAN

We overview the results on the shift of the spectrum and norm bounds for variation of spectral subspaces of a Hermitian operator under an additive Hermitian perturbation. A particular attention is paid to the very recent subspace perturbation bounds. Then we apply the abstract results to few-body Schrödinger operators.

3. **Е.А. Kolganova, А.А. Korobitsin (BLTP)**

THE RARE GAS CLUSTERS AND UNIVERSALITIES

The work is devoted to the theoretical study of the properties of rare gas clusters. The numerical results on the binding energies of dimers and trimers are reviewed.