

Report

The purpose of my visit in the Institute of Physics in Hannover was to discuss the present stage of the project that I work on together with Prof. Maciej Lewenstein, coordinate further activity and to prepare proposal to European Commission within Marie Intra-European Fellowships.

During my stay in Hannover we discussed a problem of Bose-Einstein condensates in optical lattice potential with experimentalists who work in the Institute of Physics in Hannover. The consultations allow us to define what conditions we should take into account in order to simulate experiments that are planned to be carried out in the Hannover laboratories. After the discussions we started simulations of the problem. The first results indicate that small random potential added to a BEC trapped in an optical lattice potential leads to fragmentation of the condensate. The nature of the fragmented condensate and its signature in experimental detection are now under investigation.

In Hannover we worked also on the proposal to European Commission within Marie Intra-European Fellowships. All issues concerning the details of the proposal were resolved and the main part of the project was written.

My collaboration with Prof. Lewenstein lasts and it is going to be much more active if our proposal to European Commission is evaluated positively.

Krzysztof Sacha