

STSM Visit Report for Ivana Paidrova

Scientific report

The aim of the 10 day visit in the Laboratoire de Physique Quantique, IRSAMC, Toulouse, was the theoretical research work with prof. Ph. Durand on model studies of quantum resonances.

The second achievement of the visit was the accomplishment of the publication 'Effective couplings between quantum resonances: application to the resonant dissociation of the ${}^6\text{Li}{}^7\text{Li}$ molecule' demonstrating the ability of simple analytical models to describe and explain experimental observations and providing results of general relevance. Simple analytical expressions were derived which allow to study the energy dependence of the dissipation rates.

The main achievement is the preparation of various approaches towards resonant collisions through modelling. This work concerns other members of the Prague group and will be effectuated within next coming months in close collaboration with the host institution.

Beside this scheduled work large discussions with Dr. F. X. Gadea were undertaken that will result in a publication dealing with ab initio studies of excited states calculations of Kr_3^+ . These calculations are necessary for semiempirically modelling dynamical processes in ionized rare gas clusters. Further close collaboration is as well presumed.

RESUME: The short visit helped substantially to accelerate the research work effectuated in collaboration in both institutions. Two publications are already expected.