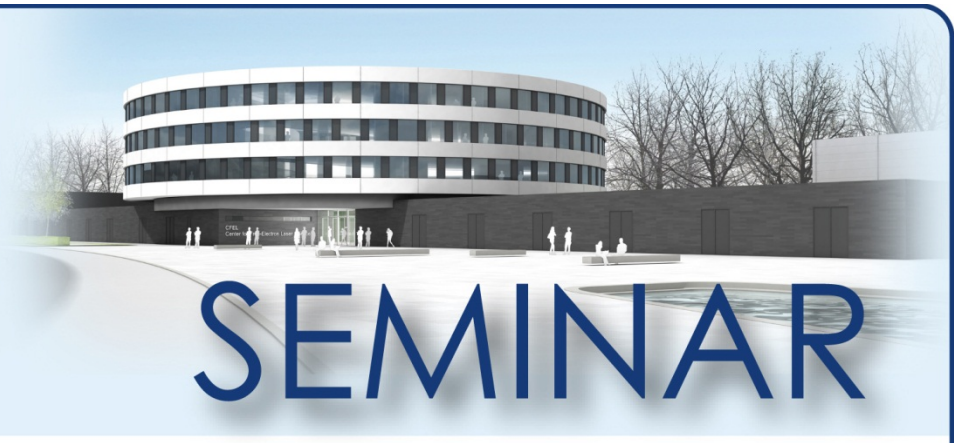
CFEL SCIENCE



SEMINAR

26th January 2017 - 10:00 h

CFEL – Building 99, seminar room I+II (ground floor)

Juan Ortigoso

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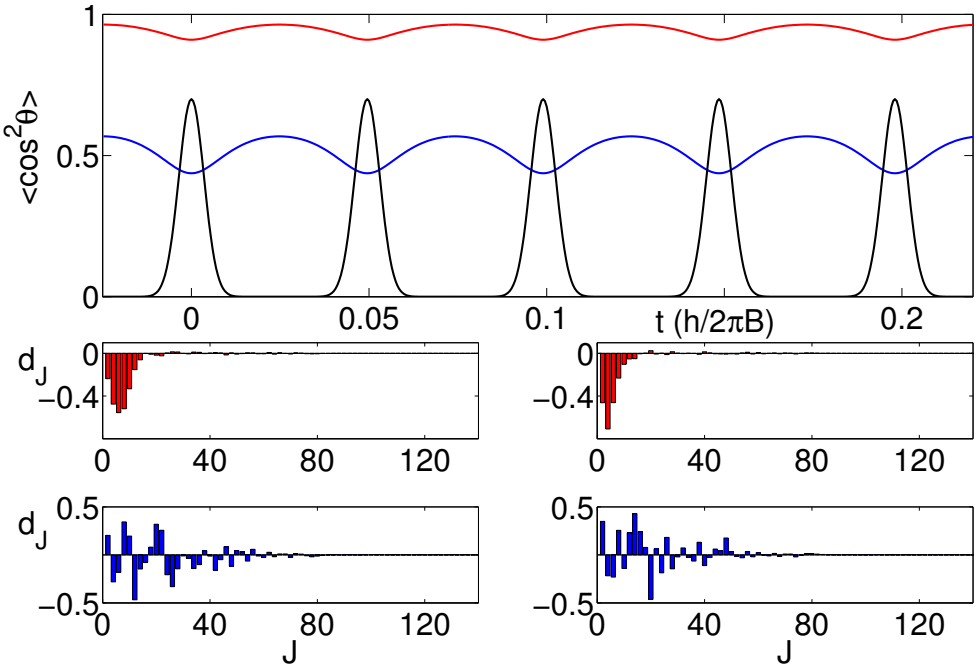
Non-adiabatic behavior in molecular quantum dynamics

Time evolution of arbitrary quantum systems is an intractable problem from the computational point of view as the computer resources needed to obtain significant results increase exponentially with the system size. Thus, molecular physicists are forced to use approximations based on semi-classical methods, perturbation theory and especially adiabatic theorems of one sort or another. In this talk I will give a light introduction to quantum dynamics emphasizing its current limitations. In the second part of the talk I will introduce the quantum adiabatic theorem and discuss some claims of inconsistency that have been formulated recently. I will give examples for the most important concepts in relation to molecular orientation phenomena. Finally, I will discuss the dynamics of time periodic systems in the light of Floquet theory. The talk is intended for a general audience so no Hamiltonians will be shown.



Host: Jochen Küpper/ CFEL Molecular Physics Seminar