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Probing solvation effects at conical intersections by ultrafast photoelectron imaging BENOIT SOEP, LIONEL POISSON, CNRS, KEVIN RAFFAEL, Washington University St Louis, JEAN MICHEL MESTDAGH, CNRS, LABORATOIRE FRANCIS PERRIN TEAM[1] — The electronic excitation of polyatomic molecules is generally followed by relaxation of the electronic energy to the ground state or to metastable, low lying states such as triplet states in hydrocarbons. It can be extremely rapid whenever conical intersections between the surfaces are at play, owing to their structural changes. Since, in general, relaxation is observed in condensed phases, it is essential to conduct the relevant experiments in the presence of a perturbing medium, here the surface of an argon cluster. We address the coupling of two excited configurations in a molecule possessing charge transfer intermediates thus prone to medium effects. We shall compare here the observation of the free and deposited molecule at the surface of argon clusters. The effect of the cluster and the possibility to record significant photoelectron spectra is thus described that represents an innovation for large systems. We made use of the anisotropy of the photoelectron angular distribution of the electrons to unravel the dynamics of the several excited configurations that are traversed during the electronic relaxation.

[1]DRECAM/SPAM

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