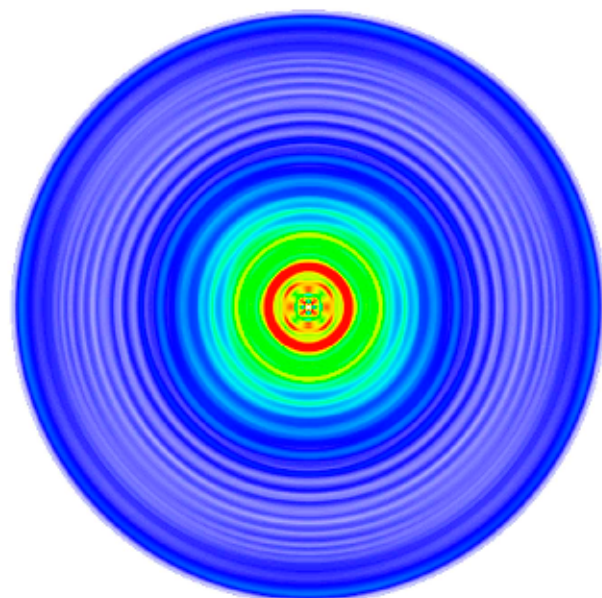


V Jornadas de Jóvenes Investigadores en Física Atómica y Molecular



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Strong field control of predissociation dynamics

G. Balerdi¹, M.E. Corrales¹, V. Lorient^{1,2}, G. Gitzinger^{1,2}, J. González-Vázquez¹, I. R. Solá¹, R. de Nalda², L. Bañares¹

¹*Departamento de Química Física, Facultad de Ciencias Químicas (Unidad Asociada CSIC), Universidad Complutense de Madrid, 28040 Madrid, Spain*

²*Instituto de Química Física Rocasolano, CSIC, C/ Serrano 116, 28004 Madrid, Spain*
E-mail: garikoitz.bv@gmail.com

Strong field control scenarios are investigated in the CH₃I predissociation dynamics at the origin of the second absorption B-band, in which state-selective electronic predissociation occurs through the crossing with a valence dissociative state [1]. Dynamic Stark control (DSC), which was recently demonstrated by Sussman *et. al* [2], and pump-dump strategies are shown capable of altering both the predissociation lifetime of the excited Rydberg state and the product branching ratio.

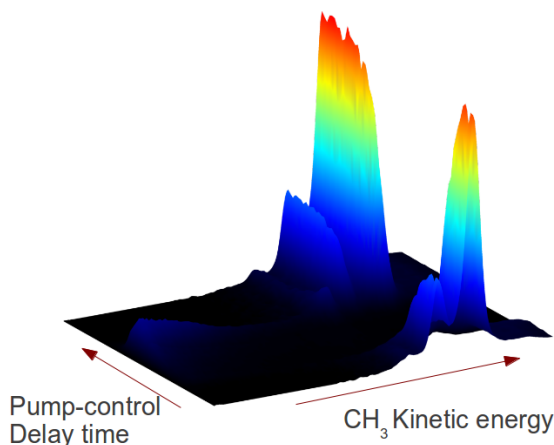


Figure 1. Speed distribution of the CH₃ fragments generated after predissociation of CH₃I as a function of the delay between the pump and control laser pulses. Suppression of the photofragmentation is observed when the pulses are overlapped in time due to dynamic Stark shift (DSS)

[1] G. Gitzinger, M.E. Corrales, V. Lorient, G.A. Amaral, R. de Nalda and L. Bañares, *J. Chem. Phys.* 132, 234313(2010).

[2] B. J. Sussman, D. Townsend, M. Y. Ivanov and A. Stolow, *Science*, 314, 278(2006).