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**Fragmentation dynamics inside helium nanodroplets:  
new theoretical results** NADINE HALBERSTADT<sup>1</sup>, LCAR-  
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Laboratoire de Chimie Theorique — We present a theoretical study on  
the effect of a helium nanodroplet environment on the fragmentation dy-  
namics of embedded rare gas cluster ions. The helium atoms are treated  
explicitly, with zero-point effects taken into account through an effec-  
tive helium-helium interaction potential. All the nonadiabatic effects  
between electronic states of the ionized rare gas cluster are taken into  
account. Our results reveal new mechanisms for the cooling by helium,  
and show that the dopant can be ejected from the helium droplet. These  
results will be presented and discussed.

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