AU Rayane, D, Compagnon, I, Antoine, R, Broyer, M, Dugourd, P, Labastie, P, L'Hermite, JM, Le Padellec, A, Durand, G, Calvo, F, Spiegelman, F, Allouche, AR
TI Electric dipole moments and polarizabilities of single excess electron sodium fluoride clusters: Experiment and theory
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AB In this article we present the first measurement of the electric dipole susceptibility of one excess electron NanFn-1 clusters. The static electronic polarizability and the permanent electric dipole of these clusters have been calculated with a one-electron model. Experimental values for the susceptibility are clearly related to the calculated values of the permanent dipole. The size evolution of the dipole moments is interpreted in terms of the interplay between the lattice and electron properties. This study outlines that the response of the cluster to the electric field cannot be fully understood with only equilibrium structure calculations and that the coupling between the permanent dipole and the vibrational motion of the cluster has to be taken into account. (C) 2002 American Institute of Physics.
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