Abstract Submitted
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Molecular Field effects investigated by Polarized Resonant Inelastic X-ray Scattering W.C. STOLTE, University of Nevada, Las Vegas, R. GUILLEMIN, S. CARNIATO, L. JOURNEL, R. TAIEB, Laboratoire de Chimie Physique Matiere et Rayonnement, D.W. LINDLE, University of Nevada, Las Vegas, M. SIMON, Laboratoire de Chimie Physique Matiere et Rayonnement — Angular dependence of the Cl 2p spin-orbit components is observed experimentally in resonant inelastic x-ray scattering (RIXS) after 1s excitation in CF_3Cl and HCl. Theoretical analysis interprets this dependence by population differences in the $2p_{x,y,z}$ states, and molecular-field and singlet-triplet exchange effects. Thus, polarized RIXS provides a direct measurement of the $2p_{x,y,z}$ states populations, and a probe of the molecular environment.

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