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Cl Kα resonant x-ray Raman scattering from CF_3Cl A.C. HUDSON, W.C. STOLTE, R. GUILLEMIN, O.A. HEMMERS, D.W. LINDLE, University of Nevada, Las Vegas, P.W. LANGHOFF, San Diego Supercomputer Center, University of California-San Diego — Polarization dependent Kα x-ray emission has been measured after core Cl $1s$ resonant excitation of gas phase CF_3Cl. All of these measurements in the near-threshold region show significant non-statistical polarization differences with photon energy. For photon energies above-threshold, the theoretical doublet (α_1:α_2 or $2p_{3/2}$:$2p_{1/2}$) ratio of 2:1 is preserved but only when taking an average of the two polarization measurements. Work was partly supported by NSF grant PHY-01-40375.

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