Cl Kβ and Cl Kα resonant x-ray Raman MARC SIMON, LOIC JOURNEL, STEPHANE CARNIATO, RICHARD TAIEB, Laboratoire de Chimie-Physique Matière et Rayonnement, IVO MINKOV, FARIS GEL’MUKHANOV, HANS AGREN, Royal Institute of Technology, RENAUD GUILLEMIN, WAYNE STOLTE, AMANDA HUDSON, OLIVER HEMMERS, DENNIS LINDLE, University of Nevada Las Vegas — Kβ and Kα x-ray emission has been measured after core Cl 1s resonant excitation of gas phase HCl. Dispersive asymmetrical Kα emission lines were observed. This new effect is described in terms of resonant x-ray Raman scattering. In the case of the Kβ, we observed a dynamical emission explained, thanks to theoretical calculations, by the nuclear dynamics on a sub-femtoseconde time scale. Work was partly supported by NSF grant PHY-01-40375.