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Cl Kβ and Cl Kα resonant x-ray Raman MARC SIMON, LOIC JOURNEL, STEPHANE CARNIATO, RICHARD TAIEB, Laboratoire de Chimie-Physique Matiere 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.

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