Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Crossed-beam dc slice imaging studies of Cl(^{2}P$_{3/2}$) reactions with n-pentane, isopentane, and neopentane ARMANDO ESTILLORE, LAURA VISGER, ARTHUR SUITS, Chemistry Department, Wayne State University, Detroit, MI 48202 — The interaction of chlorine with hydrocarbons has become an important aid in understanding the chemistry in combustion, atmospheric, and marine environments. Here, we present a systematic study of the reactions of ground state Cl(^{2}P$_{3/2}$) atoms with n-pentane, isopentane, and neopentane. The reactions are studied using crossed molecular beam and dc slice ion imaging techniques. The product alkyl radical $m/z = 71$ were detected *via* single photon ionization at 157 nm. Center-of-mass translational energy and angular distributions were directly obtained from the images. Product angular distributions showed backward scattering and that most of the available energy (∼50-75%) are partitioned among the products.

Armando Estillore
Chemistry Department, Wayne State University, Detroit, MI 48202

Date submitted: 20 Nov 2009 Electronic form version 1.4