# TRACE GAS MEASUREMENTS WITH A MULTIPLEXED INTRA-PULSE QUANTUM CASCADE LASER SPECTROMETER

D. WILSON, G. DUXBURY and N. LANGFORD, *Department of Physics, SUPA, John Anderson Building, University of Strathclyde, 107 Rottenrow, Glasgow G4 0NG, Scotland,UK.*

Quantitative measurements of the equilibrium concentrations of nitrogen dioxide and dinitrogen-tetroxide have been made using a multiplexed intra-pulse QC laser spectrometer. The measurements were made using long duration pulses from 7.84 and 7.46 micron Quantum Cascade (QC) lasers in the QC laser spectrometer. For double pulse operation the pulse signal from the first laser controller is used to generate a delayed optical pulse from the second laser by using a digital delay pulse generator.This allows two spectra to be recorded sequentially using the 2 Gs high speed digitiser. The spectra are compared with the dimer spectra recorded by J Vander Auwera and his colleagues using using a high resolution Fourier transform spectrometer at the Free University of Brussels.