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Total OH reactivity in ambient air measured in the Pearl-River Delta in China 2006

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We have developed a new instrument for the measurement of the total atmospheric OH reactivity, which is defined as the pseudo-first order loss-rate coefficient of OH, resulting from the reactions of OH with atmospheric trace gases like VOCs, CO, NO_x etc. The instrument is capable of measuring the lifetime of OH (i.e., the reciprocal OH reactivity) in ambient air, by using a pulsed UV-pump laser-induced fluorescence (LIF) probe technique. The measurement range covers reactivities between $1\,s^{-1}$ to about $150\,s^{-1}$, corresponding to conditions from very clean to very polluted environments, with a time resolution of 1-3 min.

Here we present measured OH reactivities which were collected during the PRIDE-PRD 2006 photochemistry field campaign in the Pearl River Delta (PRD) in South-China, and present an analysis of the total burden of reactive VOCs encountered at PRD.