

China Pearl River Delta Creating Large Amounts of Hydroxyl Radicals

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Credit: Wikipedia

A team of atmospheric scientists have published their field study findings about unusual chemical reactions taking place in the Pearl River Delta in China during 2006. The Julich Research Center's Institute for Tropospheric Chemistry in Germany and institutes in China and the USA participated in round the clock samplings of various atmospheric constituents in the Pearl River region located about 60 kilometers from Guangzhou noted for its high population and a repository for air borne pollutants wafting in from nearby industrial cities combined with volatile organic substances produced by local vegetation and trees.

The highly reactive hydroxyl radicals typically appear in fractions of a second prior to combining with volatile organic chemicals and other gases which act as a cleanser for the atmosphere. Scientists found unusually high levels and surge in hydroxyl radical levels, but without an

accompanying increase in ozone levels around noon time. The scientific team found hydroxyl radicals levels some three to five times more than would be expected in current models of atmospheric chemistry.

Altogether, for some inexplicable reason or known source of hydroxyl produced an astounding 28 parts per billion each hour concentration of the chemical.

The net effect is that a not yet discovered process has occurred in the Pearl River Delta that is producing an extremely high level of hydroxyl radicals. The next step of the research is to test samples of the air from the Pearl River region to see if light-stimulated reactions produce similar high readings of hydroxyl radicals under lab conditions. Thus far, the scientists are impressed with their unusual findings, but are only able to speculate on the source coming from a combination of anthropogenic sources, biogenic sources and gases found in the air surrounding the delta.

Source: Amplified Trace Gas Removal in the Troposphere;
www.sciencemag.org/cgi/content/abstract/1164566

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