

Two 'new' greenhouse gases growing

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Two new greenhouse gases are accumulating in the atmosphere, according to an international research team led by scientists from the Scripps Institution of Oceanography in the US and CSIRO scientist, Dr Paul Fraser, from the Centre for Australian Weather and Climate Research.

Nitrogen trifluoride (NF_3) and sulfuryl fluoride (SO_2F_2) are powerful [greenhouse gases](#) that have recently been discovered to be growing quickly in the global background [atmosphere](#).

These gases are used in industrial processes, partly as alternatives to other harmful greenhouse and ozone depleting gases.

NF_3 is used in the electronics industry - often as a replacement for perfluorocarbons (PFCs) - particularly in the manufacture of liquid-crystal flat-panel screens. SO_2F_2 is used as a replacement for methyl bromide, largely in structural fumigation applications. The new measurements of SO_2F_2 appear in a paper co-authored by Dr Fraser in the 12 March 2009 edition of the [Journal of Geophysical Research](#).

"Information about the abundance of these gases in the atmosphere, their growth rates, lifetimes, and emissions is just emerging," Dr Fraser says. "Currently the level of these gases in the atmosphere is low, but their concentration is growing. In addition, these gases have significant global-warming potential."

The first atmospheric observations of these gases from data collected

around the world - particularly at Trinidad Head and La Jolla, California, and Cape Grim, Tasmania - will be presented at the GREENHOUSE 2009 conference.

"This research is likely to affect the revision of the Kyoto Protocol later this year," Dr Fraser says. "New emissions targets for the existing 'basket' of gases (carbon dioxide, methane, nitrous oxide, PFCs, hydrofluorocarbons, sulfur hexafluoride) are likely, as well as inclusion of the new greenhouse gases. A number of new signatories from the developed and developing world are also included in the revised Protocol."

Source: CSIRO Australia

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