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From: Deborah Zabarenko, Reuters
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Scientists Predict Asian Dust Plume Might Sway U.S. Climate

WASHINGTON -- Asian desert dust and city pollution is swirling in vast plumes across the Pacific to North America, interacting with storms and possibly spurring climate change, an airborne scientist said Tuesday.

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Jeff Stith of the National Center for Atmospheric Research communicated with reporters via Web chat from a research jet flying 40,000 feet above the ocean as part of a mission to track dust and pollution particles blown from Asia to the United States.

"We have found enhancements in pollution levels in some of the upper regions of the storm clouds we studied, just yesterday for example," Stith wrote.

Stith and his ground-based colleague, V. Ramanathan of the Scripps Institution of Oceanography, aimed to study the interaction between the pollution and dust with high-altitude clouds bearing ice crystals.

Ice crystals are found in extremely cold clouds, and when the crystals are composed entirely of frozen water, they reflect lots of sunlight -- that's why these clouds look so white, Ramanathan said by telephone after the Web chat.

However, if particles of dust and a dark pollutant known as black carbon managed to get inside the crystals, these clouds might absorb more solar energy rather than reflecting it all, Ramanathan said.

The high-flying jet, a specially equipped Gulfstream V, has a range of 6,000 miles and is needed to monitor the dust plumes, which speed across the ocean and occur every few days, the scientists said.

FAST-MOVING POLLUTION

"We are finding that the entire Pacific Ocean is just a hop, skip and a jump away from North America; the dust and pollution plumes are traveling fast and Hiaper (the scientists' name for the plane) is able to keep up with the plume," Ramanathan wrote in the Web chat.

The plane's sophisticated instruments monitor the dust and pollution, but it is also visible to scientists traveling through it, Stith wrote.

"The dust itself will be yellowish in color; but when it is mixed with BC (black carbon) it gets brownish; Normally when you are above the dust layer and you look at the sky sideways it will be brown in color," Stith wrote.

The plume begins forming when dust is lifted from the Mongolian and Taklamakan deserts, according to Stith. When it passes over East Asia, it picks up aerosol particles from burning fossil fuels, cooking fires and other fires where biomass goes up in flames.

The experiment only tracks the plumes as they travel across the Pacific but Ramanathan said high-altitude pollution -- above 1.9 miles -- should be able to travel across North America and out over

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the Atlantic Ocean.

"This is why dust and soot getting into the higher layers is so important," Ramanathan wrote. "This is what makes a local (problem) into a global problem."

Images of Asian dust and pollution clouds, the research aircraft and its route across the Pacific can be seen online at <http://www.ucar.edu/news/releases/2007/pacdexvisuals.shtml>.

Source: *Reuters*

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