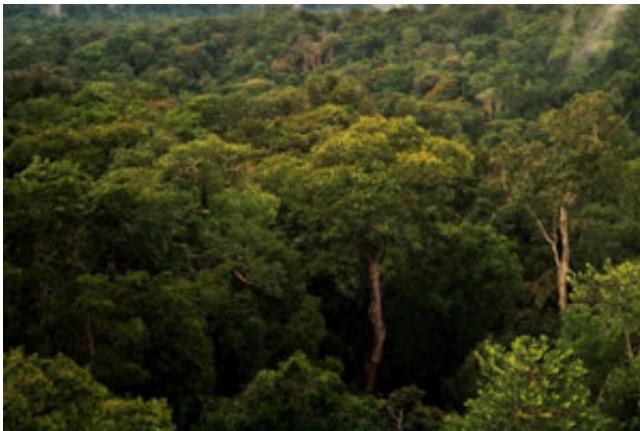


Scientists head to tropical rainforests for pioneering study of the gases emitted by trees

July 31 2014, by Aeron Haworth



Scientists will examine the haze emitted from the forest Credit: Phil P Harris

Scientists from The University of Manchester have teamed up with colleagues in Brazil to venture into the Amazonian rainforest to take part in a pioneering study of the gases emitted by trees which could help us better predict climate change.

Tiny [atmospheric particles](#) – known as aerosols – are emitted naturally from the tropical foliage to form a haze which, in turn, reflects sunlight back to space. This can partly offset the warming effect of [carbon dioxide](#) and other [greenhouse gases](#) which can complicate climate change predictions.

Dr James Allan said his team from Manchester's School of Earth,

Atmospheric and Environmental Sciences, will join their counterparts from the University of Sao Paulo as part of an international research agreement between the two universities.

The group expect to achieve breakthrough analysis by using a new kind of apparatus that can record emissions with unprecedented levels of accuracy.

Dr Allan, a Senior Research Fellow, explained: "Atmospheric particulates, or aerosols, have been consistently identified by the Intergovernmental Panel on Climate Change (IPCC) as the largest source of uncertainty when trying to predict trends in [climate change](#).

"By forming hazes and increasing the whiteness of clouds, these aerosols reflect sunlight back to space and partly offset the warming effect of carbon dioxide and other greenhouse gases.

"They come from a variety of sources, including man-made ones such as fires and fossil fuel burning, but are also produced through natural processes. A major example of the natural type are the particles formed when organic gases emitted by trees react with sunlight, although this phenomenon is currently very poorly understood and quantified.

"In collaboration with the University of Sao Paulo, we will be using a new, state-of-the-art atmospheric instrument called the Filter Inlet for Gases and AEROSols Chemical Ionisation Mass Spectrometer (FIGAERO-CIMS) at a site in the Amazon rainforest to simultaneously study organic gases and particles with an unprecedented level of detail.

"While similar measurements have been performed by other groups in temperate and boreal forests, this will be the first time that such a measurement has been performed in the tropics. This is important because tropical forests play a large role in local and [global climate](#), but

emit a very different mixture of organic gases to those at higher latitudes.

"Work to understand these processes will contribute to our ability to better predict the shifts in weather and climate that will take place in a changing world."

Provided by University of Manchester

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