

**ENN Press Services**  
Put your story in front of thousands of journalists, broadcasters and environmental professionals worldwide.



**A Happy Relationship Keeps Blood Pressure Low**

TOP STORIES WILDLIFE AGRICULTURE ECOSYSTEMS ENERGY BUSINESS CLIMATE POLLUTION GREEN BUILDING SCITECH LIFESTYLE HEALTH search

Where am I? > [Home](#) > [Top Stories](#) > [Current climate models 'ignori...](#)

Printer Friendly Version Email to a Friend ShareThis

From: , Science and Development Network, More from this Affiliate  
Published August 18, 2008 10:50 AM

**Current climate models 'ignoring brown carbon'**

[BEIJING] [Scientists have found](#) that air [pollution](#) from East Asia contains an abundance of 'brown carbon' particles and say that atmospheric models need updating to incorporate their effect.

Current climate models take into account two types of [aerosol](#) carbon — organic carbon and black carbon — that arise from the burning of fossil fuels or biomass.

Black carbon strongly warms the atmosphere by absorbing light, while organic carbon absorbs light at a negligible level and has no warming effect.

It has already been claimed black carbon plays a much larger role in [global warming](#) than estimates made by the UN Intergovernmental Panel on Climate Change's (see [Black carbon climate danger 'underestimated'](#)).

But this approximation is too simple, according to Peter Crozier, an associate professor at Arizona State University (ASU) in the United States, whose team published their research in [Science](#) last week (8 August).

According to the authors, the method that is currently used to measure the warming effect of different types of particle doesn't take into account the wide variations that can occur between types of carbon from different sources.

They instead used a technique based on a specialised type of [electron microscope](#) to directly determine the optical properties of individual carbon particles, and found that samples taken from above the Yellow Sea, east of China, have an abundance of brown carbon particles.

"Brown carbon has light absorbing properties that lie between strongly absorbing black carbon and materials that only scatter light and do not absorb," co-author James Anderson, a research scientist at ASU's Department of Mechanical and Aerospace Engineering, told SciDev.Net.

He adds that brown carbon both cools the Earth's surface and warms the atmosphere, resulting in a complex role in global warming, hence the necessity to incorporate it into climate models.

Hu Guoquan, a senior scientist at the Beijing-based National Climate Centre, welcomes the study, saying it highlights the uncertainties of IPCC models.

"But more studies on the chemical structure and size of brown carbon particles must be done," he told SciDev.Net.

In addition, Hu says, as many carbon aerosols pollutants are emitted by China or India — which have massive combustion of fossil fuels and biomass — judging their accurate warming or cooling effect must be done cautiously and avoid claims without sufficient scientific evidence, as this will contribute to determining the nations' responsibilities in global warming.

[ShareThis](#)

**RELATED ARTICLES**

- Climate assumptions 'optimistic at best'
- China: Greener than you think
- Untouched forests store 3 times more carbon: study
- Scientist urges carbon tax to help climate



**SIGN UP**

Stay updated with the ENN RSS feed

**MEMBERS**

- » [Contributors](#)
- » [Press Affiliates](#)

**PRODUCTS & SERVICES**

- » [Submit a Press Release](#)
- » [Contribute to ENN](#)

**ADVERTISE WITH ENN**

- » [Advertising Rates](#)
- » [Contact ENN Sales Team](#)

**ENN ARCHIVES**

- » [News Archive](#)

**ABOUT ENN**

- » [About ENN](#)
- » [Contact ENN](#)
- » [Recommended Sites](#)

**Green Money Journal**

View all the featured contributing content by this source

**PRESS ALERTS**

Get the latest releases from the world's leading environmental businesses and nonprofits

**SIGN UP**

**GET YOUR SMOKEY ON**

ONLY YOU CAN PREVENT WILDFIRES.

