

## ***Interactive comment on “Arctic smoke – record high air pollution levels in the European Arctic due to agricultural fires in Eastern Europe” by A. Stohl et al.***

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Received and published: 20 December 2006

Dear Dr. Stohl and colleagues,

Firstly let me congratulate your team on this important finding that you believe to be due to agricultural burning activity in Eastern Europe. We have just one comment on your methodology concerning the estimation of burned area. We are concerned with your assumption that each active fire (with a confidence rating above 75) results in a burned area of 180 ha. This is a large area particularly in a agricultural region. Whilst we do not argue with the findings of Wotawa et al. 2006, as we understand they derived this relationship for boreal forest fires, which tend to be large with clear fire fronts. We

suggest that in agricultural regions, the fire size is smaller and there will not be a clear relationship between active fire counts and burned area.

We acknowledge a lack of both a time series and up-to-date information on global burned areas. A number of projects, based on direct measurement from Earth Observation Data, are being finalised next year (2007) that should help with uncertainties in your computations. The first is a global product, multi-year 2000-2006, 1 km resolution and available at daily time intervals from SPOT VGT data. This is called the L3JRC product - the result of a research initiative between Universities of Leicester and Louvain-la-Neuve, ISA, Lisbon and the European Commission JRC. We hope to publish a validated product in Spring 2007. The second is also a global product, 1km resolution, multi-year 1998-2007, available in monthly time periods. This is an ESA product called GlobCarbon and will be released before the summer of 2007. The third is the MODIS burned area product (I do not know when this is likely to be released).

We hope that you will be in a position to re-compute your emissions results once these new data sets are available.

Yours faithfully, Kevin Tansey (University of Leicester, UK)

Jean-Marie Gregoire (European Commission JRC)

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Interactive Discussion

Discussion Paper

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 9655, 2006.

ACPD

6, S5561–S5563, 2006

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