

## ***Interactive comment on “Short-lived pollutants in the Arctic: their climate impact and possible mitigation strategies” by P. K. Quinn et al.***

**K. Carslaw (Editor)**

CARSLAW@ENV.LEEDS.AC.UK

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This is a useful review of short term effects on Arctic climate. However, it would be much more useful to the community if some improvements could be made.

Firstly, the review section of the paper, although well written, requires substantially more references. Many statements are made with no literature support. I would estimate that at least 30 more references are required in this section.

Secondly, please briefly describe the issues associated with calculating surface temperature response from forcings. What are the uncertainties here?

Thirdly, Section 5 should include an estimate of the change in surface warming that can be achieved by the various mitigation strategies. Also, some comment should be

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made, backed up by references, about what we already know about source regions. Reductions in, say, EC emissions in some regions will presumably have very little effect on Arctic climate.

Fourthly, Section 6 is too brief. For example, for EC, clearly we need to understand sources, transport and sinks, but what are the major challenges here? Why have previous studies not quantified these terms? What is the relative importance of uncertainties in sources and sinks? Similar questions arise for the other forcing agents.

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Interactive comment on Atmos. Chem. Phys. Discuss., 7, 15669, 2007.

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