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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Modelling atmospheric transport of persistent organic pollutants in the Northern Hemisphere with a 3-D dynamical model: DEHM-POP" *by* K. M. Hansen et al.

Anonymous Referee #1

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This paper presents a nice contribution to the modeling of POPs in the atmosphere through the application of the model to the a-HCH. The paper described the processes involved by a-HCH in the atmosphere and presented some useful results, which are useful to understand the behaviours of a-HCH. The paper is well structured.

There are four aspects that need to be addressed in a revised version of the paper:

(1) The paper title uses a rather general term Ű POPs, while it only focuses on a-HCH. For other POPs, more processes would be included. See point (2) and (3) below. (2) The dry deposition of any POPs in the model was not discussed at all and definitely not included. Is this process an important sink for POPs? For some semi-volatile POPs it is demonstrated an important process for both gas and particle-bound species. Need

an explanation! (3) For any semi-volatile POPs, the partitioning of POPs between gas phase and aerosol phase has to be included. The paper so presented can only apply to volatile species. ThatŠs why a generalized term Ű POPs may not be appropriate in the current content. (4) The ocean water module is over-simplified by assuming a well mixed layer. How about the advection of POPs by prevailing ocean currents, e.g. from tropic to the Arctic?

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 1339, 2004.

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Interactive Discussion

Discussion Paper