

***Interactive comment on* “Emissions of primary aerosol and precursor gases in the years 2000 and 1750, prescribed data-sets for AeroCom” by F. Dentener et al.**

Anonymous Referee #2

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General Comments

The manuscript describes a recommended set of emission inventories for aerosols and gaseous precursors for pre-industrial times (year 1750) and year 2000. The main purpose of the manuscript is the harmonisation of emission input data to global models in order to improve the comparability of model results for the global aerosol distribution. So far inhomogeneous emission input data limited the interpretation of model diversity.

The authors give an extensive set of emission data and aerosol size distribution properties for dust, sea salt, DMS, volcanic emissions, secondary organic aerosol, and

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anthropogenic emissions of black carbon, particulate organic matter and SO₂ from various processes. Links to relevant data bases are provided.

The authors present important input data for modelling the global aerosol. Particular emphasis is put on the global distribution, source strength and microphysical properties of particles emitted by wildfires. The manuscript is of high quality with respect to scientific content and presentation. The manuscript is recommended for publication in ACP after considering few minor changes discussed in the following.

Specific Comments

Section 3.1: Please provide a reference for the assumed density of dust (page 2707, line 9).

Section 3.2: Please provide a reference for the assumed density of sea-salt (page 2708, line 13). A comment on the appropriateness of the assumed widths of 1.59 for Aitken and accumulation modes and 2.0 for the coarse mode would help.

Page 2709, line 23: change to "... to be continuously released..."

Page 2710, line 24: I cannot agree with the statement, that elemental carbon is only the light absorbing fraction of BC. It should read that BC is the light absorbing fraction of EC.

Page 2719, line 20: change to "... regional distributions for pre-industrial ..."

Page 2720, line 16: incomplete sentences, replace full stop by comma.

Page 2720, line 17; change references: Andreae and Merlet, 2001; Cachier et al., 1996.

Page 2720, line 24: change last word in line to "than".

Page 2762, Figure caption, line 2: change to "... size distributions of Fig. C1."

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 2703, 2006.

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