

Interactive comment on “Applying an ensemble Kalman filter to the assimilation of AERONET observations in a global aerosol transport model” by N. A. J. Schutgens et al.

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Recently we have been expanding our assimilation studies. Although we do not wish to include new results in the current paper, they have relevance for the discussion on AAE assimilation.

Fig 1 and 2 show AOT and AAE at Ascension Island in the tropical South Atlantic. The figures show a comparison of an experiment without assimilation (standard SPRINT-ARS 3.54 with Monahan parametrisation for seasalt emission) and two assimilation experiments (mamo1 and mamo5). The difference between those experiments is not important for the present discussion. In both assimilation experiments, AERONET

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AOT and AAE and MODIS Aqua AOT over ocean were assimilated.

The plots do not constitute independent validation, because the AERONET site at Ascension provided observations for the assimilation. But it is obvious that the Kalman filter reacted to both AOT and AAE observations and brought the model more in line with the observation. Note that $AOT < 0.2$. It seems that our initial conclusion (that $AOT > 0.4$ for AAE assimilation to be successful) was premature. It appears that the impact of AAE assimilation does not only depend on AOT magnitude.

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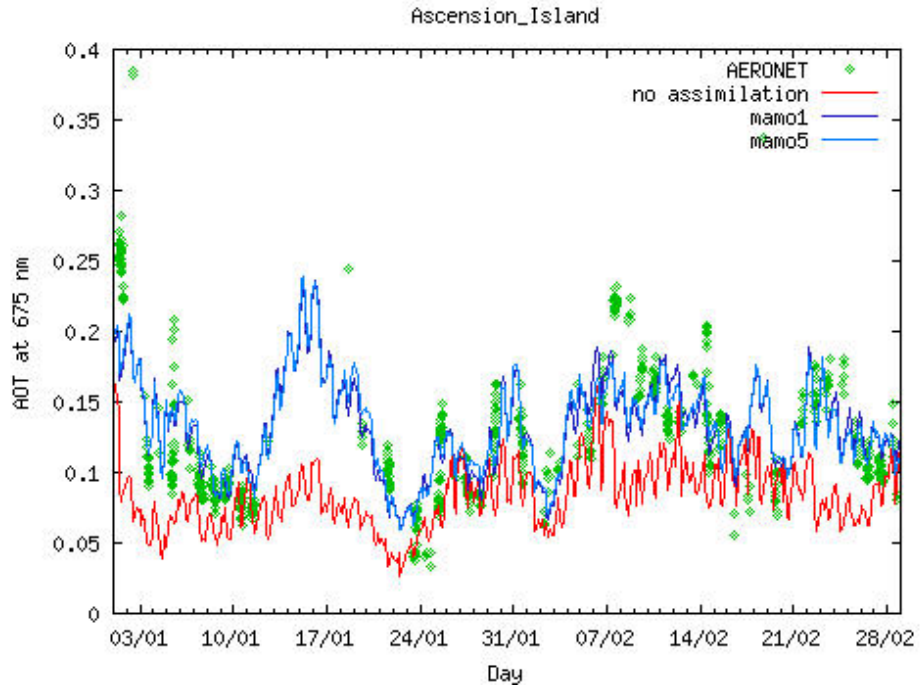


Fig. 1. AOT at Ascension

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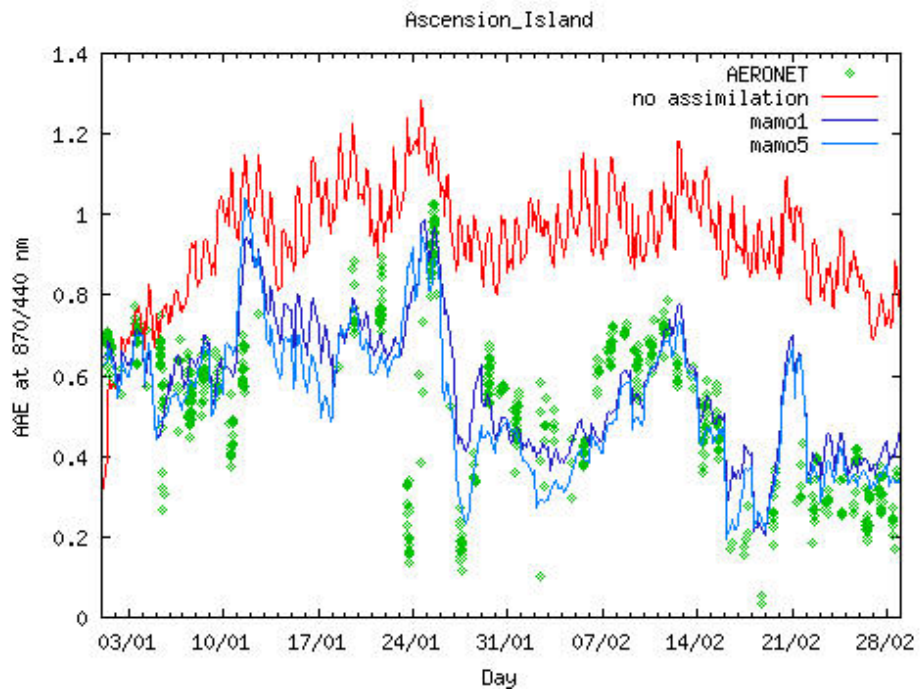


Fig. 2. AAE at Ascension

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