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- Recent Final Revised Papers
- Volumes and Issues
- Special Issues
- Library Search
- Title and Author Search

Online Library ACPD
Alerts & RSS Feeds
General Information
Submission
Review
Production
Subscription
Comment on a Paper

Volumes and Issues | Contents of Issue 6

Atmos. Chem. Phys., 7, 1537-1547, 2007
www.atmos-chem-phys.net/7/1537/2007/

Technical Note: A new SIze REsolved Aerosol Model (SIREAM)

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Abstract. We briefly present in this short paper a new SIze REsolved Aerosol Model (SIREAM) which simulates the evolution of atmospheric aerosol by solving the General Dynamic Equation (GDE). SIREAM segregates the aerosol size distribution into sections and solves the GDE by splitting coagulation and condensation/evaporation-nucleation. A quasi-stationary sectional approach is used to describe the size distribution change due to condensation/evaporation, and a hybrid equilibrium/dynamical mass-transfer method has been developed to lower the computational burden. SIREAM uses the same physical parameterizations as those used in the Modal Aerosol Model, MAM Sartelet et al. (2006). It is hosted in the modeling system Polyphemus Mallet et al., 2007, but can be linked to any other three-dimensional Chemistry-Transport Model.

Final Revised Paper (PDF, 373 KB) Discussion Paper (ACPD)

Citation: Debry, E., Fahey, K., Sartelet, K., Sportisse, B., and Tombette, M.: Technical Note: A new SIze REsolved Aerosol Model (SIREAM), Atmos. Chem. Phys., 7, 1537-1547, 2007. Bibtex EndNote Reference Manager

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