AeroCom wrap up

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17th AeroCom workshop
College Park, 15-19 October 2018

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Summary of summary of AeroCom 2018

- Next workshop

- Management suggestions

- AeroCom exchange initiative / stipendium

- Science goals and deliverables 2018/2019

- Analysis topics

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Next workshop

Management suggestions

Management suggestions

- Spread the dugnad culture
- Revise overview quest, add at least two more Questionnaires for
  0) overview time plan 1) Experiments   2) Model commitment for experiments
- website – explore google docs, database, github... (MetNo)
- database re-organisation / One directory per model version w experiment in file name (MetNo)
- publications (Betsy volunteers)
- documentation of models (explore esdoc, who??)
- science plan, experiment coordination,
  working groups revitalization, deliverables for 2018/2019
  => AeroCom telecons, 2-3 monthly (Bjørn & Kostas & Michael/Mian/Stefan)

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AeroCom exchange initiative / stipendium

- Come to Oslo for an AeroCom study and analysis session
- Funding is available to visit MetNo/CICERO
  for interested postdocs/scientists
- Suggested Duration: 2 weeks – 2 months
- Contact Michael/Gunnar for details

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# Science goals / Aerosol Grand & Small Challenges AeroCom deliverables 2018/2019

- Deliver a new ARI + ERF forcing estimate (partially w AerChemMIP)
- Deliver a forcing history estimate in AOGCMs (w AerChemMIP)
- Explore constraints on aerosol - cloud - precipitation interactions
- Assess w models & satellite regional aerosol trends
- Identify most significant aerosol model uncertainties
- Explore model bias wrt to SSA, AAOD, AOD, fine mode AOD ++
- Define core measurement datasets for integrated model evaluation
- Document phase III experiments, database and models participating
- Document progress made from AeroCom phase 1+2
- Create a median model, a historical aerosol climatology with 3D BC

=> should lead to key note talks at next AeroCom workshop

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Science goal #1 :: control simulation

What is your AeroCom control simulation 2018/19 -- When is it available
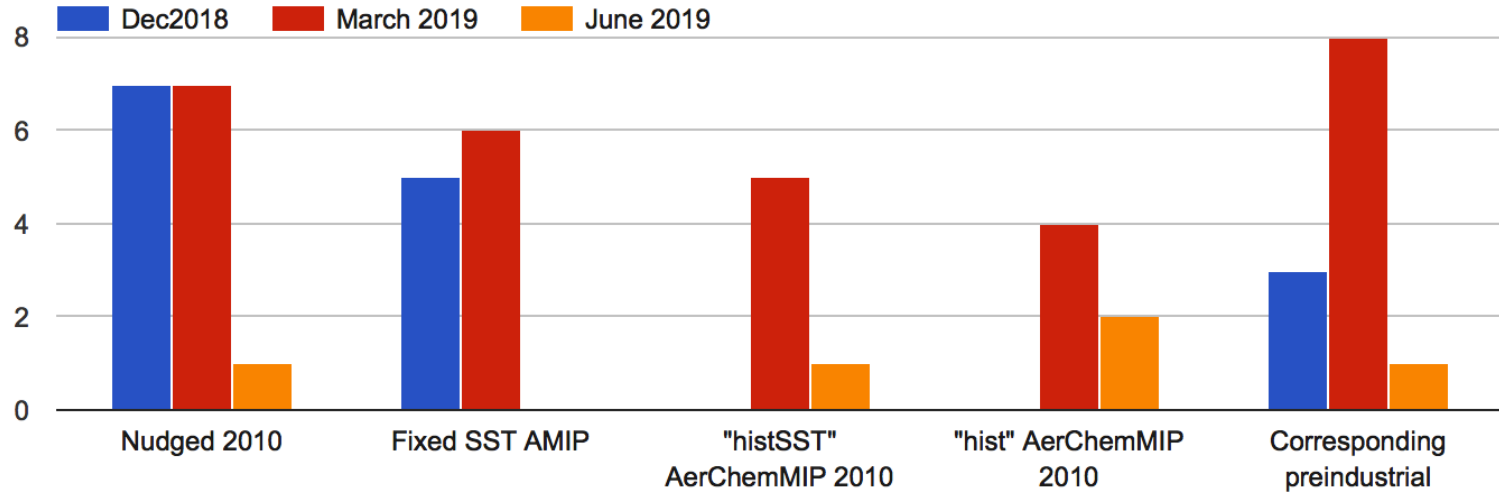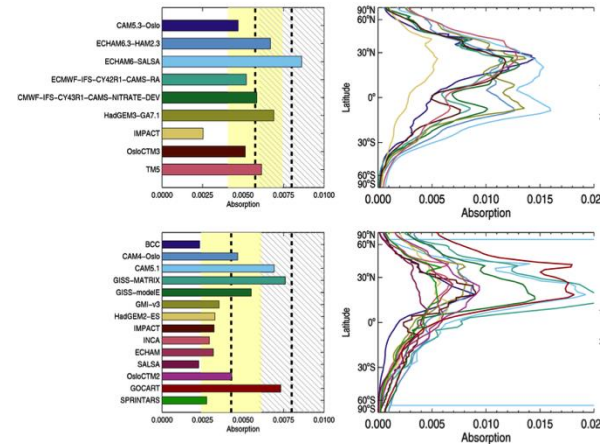
Analysis topics

more than experiments

AeroCom Phase III: Absorption analysis

- Why?
  - Aerosol absorption is notoriously hard to constrain – but crucially important for simulations of precipitation change and other climate impacts
  - There is significant inter-model spread in AeroCom, for both known and unknown reasons
  - We aim to develop a constraint based on multiple types of information

- What:
  - Simulations: CTRL and PI (i.e. no additional runs)
  - Additional diagnostics:
    - Aerosol absorption optical depth (column...at 440nm, 550nm 870nm
    - ...for total aerosol (abs550aer, abs440aer, abs870aer)
    - ...and for individual absorbing components (abs550bc, abs550oc, abs550dust, + other wvl)
    - Max. 11 new fields. Will provide prioritized list.
    - Ideally AOD for same components and wavelengths (aod550aer etc.)

- Who?
  - Bjørn H. Samset, CICERO; b.h.samset@cicero.oslo.no (with Gunnar Myhre, Camilla W. Stjern, Marianne T. Lund +++)

Analysis topics discussed @AeroCom

CONTROL experiment attached

- Historical aerosol evolution and ARI Gunnar
- Historical ERF Michael
- Stratospheric trends Mian
- Rapid adjustments Gunnar
- Absorption Bjørn
- Median Model Michael/Stefan
- Natural Aerosols Ken, Cat, Dirk Olivie, Crescendo
- Multiple Satellite-Model Remote Sensing Nick
- AeroCom Performance matrix Michael and Jonas
- Insitu Scattering and Absorption Betsy
- Humidity growth Maria Burgos
- Sea salt evaluation Huisheng
- Anthropogenic Dust Paul
- Dust infrared topic Zhibo Zhang
- Clear sky aerosol effects CERES   Wenying
- Aircraft evaluation Duncan ++

More special experiments / analysis

- More recent aircraft experiments
- Aerosol Cloud interaction Florent
- MMPPE Lindsay
- BB Mariya
- SO2 emission uncertainty, Steve, DoE project
- GCM trajectory method Daniel P.
- Aerosol feebacks / AerChemMIP
- Measurement needs Dave/Rich

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thanks