Re: Questionnaire, files request, updates for Aerocom Biomass Burning experiment

REMY Samuel [Samuel.Remy@lmd.jussieu.fr]
Sent: Monday, August 31, 2015 12:24 PM
To: Petrenko, Mariya M. (GSFC-613.0)[OAK RIDGE ASSOCIATED UNIVERSITIES (ORAU)]; Kaiser, Johannes [j.kaiser@mpic.de]

Dear Mariya,

Strange, I have them on the document. In case, I copy them just here :

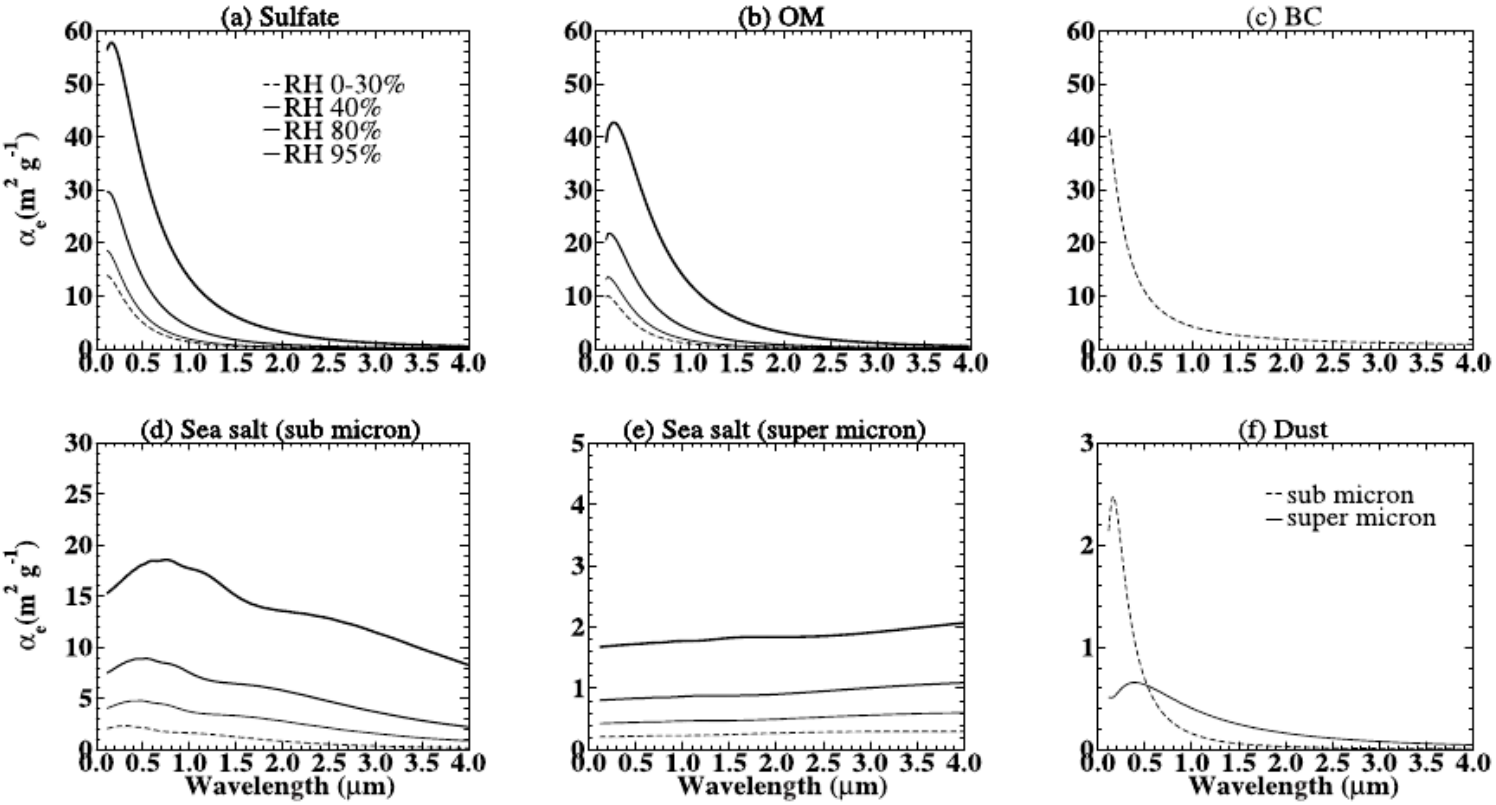

Figure 1. Aerosol mass extinction coefficients (m^2 (g sulfate)$^{-1}$ or m^2 (g dry aerosol)$^{-1}$) for the different aerosol types. For the purpose of this diagram, submicron and supermicron sea salt refers to the averages of bins 1 to 5 and 6 to 10, respectively. See color version of this figure in the HTML.

and

Table 2. Physical and Optical Properties at 550 nm of the Dry Aerosol[a]

Aerosol Type	ρ, g cm^{-3}	r_0, μm	σ_g	α_e, m^2 g^{-1}	ω	g	Refractive Index
Sulfate	1.769	0.0355	2.0	4.311	1.00	0.609	$1.53-0.000i$
BC	1.000	0.0118	2.0	9.412	0.206	0.335	$1.75-0.45i$
OM	1.769	0.0355	2.0	3.159	0.969	0.542	$1.53-0.005i$
Dust, ≤ 1 μm[b]	2.610	0.29	2.0	2.876	0.991	0.694	$1.48-0.00164i$
Dust, 1–10 μm[b]	2.610	0.29	2.0	0.557	0.955	0.706	$1.48-0.00164i$
Sea Salt[c]	1.183	0.198, 1.97	1.9, 2.0	–	–	–	$1.516-0.215\ 10^{-3}i$
(0.03–0.06 μm)				0.279	0.999	0.073	
(0.06–0.13 μm)				1.863	1.000	0.350	
(0.13–0.25 μm)				5.180	1.000	0.685	
(0.25–0.50 μm)				6.305	1.000	0.783	
(0.50–1 μm)				2.274	0.999	0.669	
(1–2 μm)				0.995	0.999	0.780	
(2–5 μm)				0.395	0.997	0.808	
(5–10 μm)				0.190	0.995	0.829	
(10–15 μm)				0.109	0.996	0.838	
(15–20 μm)				0.076	0.995	0.843	

[a]Except for sea salt for which properties are given at 80% RH. Here ρ is density; r_0 is modal radius; σ_g is geometric standard deviation; α_e is mass extinction coefficient; ω is aerosol single scattering albedo; and g is asymmetry factor.

[b]A monomodal lognormal size distribution is used and optical properties are averaged over the two bins corresponding to the submicronic and supermicronic size ranges ($d \leq 1$ and $d > 1$ μm, respectively).

[c]A typical bimodal lognormal size distribution is assumed from *O'Dowd et al.* [1997] in order to integrate sea-salt optical properties over each size bin. The number concentrations for the first and second modes are 70 and 3 cm^{-3}, respectively. Particle size refers to radius at 80% RH.

(3 bins for dust and SS in the current scheme)

Hope it helps,
Sam

Le 31/08/2015 17:09, Petrenko, Mariya M. (GSFC-613.0)[OAK RIDGE ASSOCIATED UNIVERSITIES (ORAU)] a écrit :

> Dear Sam and Johannes,
> I apologize for delay in response. Thank you for the answers and the extra reference!
> Sam, the questionnaire mentions a couple tables and figures "copied below" - they don't show up on my screen below. Could you please check if I have the correct version of the file? Thanks!
> Mariya
>
> ---
>
> **From:** REMY Samuel [Samuel.Remy@lmd.jussieu.fr]
> **Sent:** Wednesday, August 19, 2015 10:25 AM
> **To:** Petrenko, Mariya M. (GSFC-613.0)[OAK RIDGE ASSOCIATED UNIVERSITIES (ORAU)]; Kaiser, Johannes
> **Subject:** Re: Questionnaire, files request, updates for Aerocom Biomass Burning experiment
>
> Dear Mariya, dear Johannes,
>
> Please find attached the fulfilled questionnaire. Does that fit your needs?
> Cheers,
> Sam
>
> Le 12/08/2015 17:37, Petrenko, Mariya M. (GSFC-613.0)[OAK RIDGE ASSOCIATED UNIVERSITIES (ORAU)] a écrit :
>
> > Dear AEROCOM-BB participants, hello,
> > In preparation for the upcoming AEROCOM meeting, here's an update on the progress of the experiment and a couple requests.
> >
> > 1.
> > In the last year I've been ironing out the model-to-satellite comparison methodology using GOCART as an example. Interesting things emerged when I looked at the fraction of BB AOD out of total AOD in what I thought were cases heavily dominated by smoke (for example, in some places where I thought AOD is all from smoke, it turned out to be a lot of other

"stuff" besides smoke smoke). I'll tell you in Frascati. For this meeting I'd like to take a look at how BB AOD fraction compares among the models for BB regions, and the overall distribution of aerosol species in the BB cases.
For this I'll need the following files uploaded to AEROCOM server by September 7, if they are not there already:
- total column 2D AOD from BB1 run (GFED3 x 1 emissions): od550aer
- total column 2D AOD from BB0 run (no BB) : od550aer
- column AOD (2D) for different aerosol species from BB0 run : variables: od550oa, od550bc, od550so4, od550dust, od550ss (the difference between BB1 and BB0 will give me BB AOD fraction. The total AOD from, say, BC or sulphate will indicate the non-BB sulphate or carbonaceous emissions. There's also dust and if you have other aerosol species, I'd like to see these).

* file naming convention, variable names etc are in the BB experiment section of AEROCOM Wiki https://wiki.met.no/aerocom/phase3-experiments

* Time resolution for your files is 3-hr instantaneous (preferred), or daily averages.
Upon some thinking, we are no longer requesting satellite overpass time, because while it makes sense for local output (such as observation sites), for global output it creates more logistical trouble than it's worth.
NO MORE SATELLITE OVERPASS output for 2D and 3D fields.

2.
Also, in preparation for a more detailed analysis and comparisons of the output we are requesting that all participating modeling groups fill out the attached questionnaire. I provide an example filled out for GOCART. List of references mentioned in the Questionnaire will also be helpful.
This I'd like by the meeting in October.

3.
Dr. Harshvardhan's group at Purdue University are performing comparisons of model outputs with CALIPSO and have asked for daily 3D extinction coefficient at 550 nm (ec550aer) for BB1 and BB0 runs.

Thank you!
Mariya

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