

TM5-MP - Feature #681

Mineral dust absorption

09/13/2016 09:54 AM - Twan van Noije

Status:	Closed	Start date:	09/13/2016
Priority:	Low	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:		Spent time:	0.00 hour

Description

This is a follow up of TM5 issue [#338](#).

In the current TM5 code we use 0.0011 for the imaginary part of the refractive index of mineral dust at 550 nm, which is based on a revision made at some point in ECHAM (Stier et al., ACP, 2005). Recent aircraft measurements (Denjean et al., ACP, 2006) give a range between 0.0001 and 0.0046 for Saharan dust with a mean value of 0.003. This is higher than the value currently used in TM5, but is still lower than the range from OPAC (0.006 to 0.008) and the value 0.055 used in earlier versions of ECHAM (Kinne et al., JGR, 2003).

It would be worthwhile to do some tests with imaginary part as a function of wavelength scaled by a fixed ratio 0.003 / 0.0011.

History

#1 - 10/23/2017 03:15 PM - Twan van Noije

- Tracker changed from Bug to Feature

#2 - 07/02/2018 08:50 AM - Twan van Noije

- Priority changed from Normal to Low

#3 - 05/31/2022 02:05 PM - Twan van Noije

- Status changed from New to Closed

There are currently no plans of making any tests by changing the imaginary part of the refractive index as proposed above. Note that a model version is currently being developed by BSC in which the absorption properties of dust are made dependent on the mineralogical composition. This work is part of the EU FORCeS project. Closing the issue.