
Subject: Question on collection change - MOD07 air profile

Posted by [kim20026](#) on Fri, 03 Aug 2007 06:29:31 GMT

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Goodday, Everyone...

I don't know this is a good place to ask my questions, but I had already sent several e-mails to someone in Wisconsin (i.e: Dr. Suzanne Seemann and Dr. Paul Menzel) since last week. None of them didn't reply to us yet. They must be very busy thesedays. I feel like I am 'grabbing a floating straw to get out of a swamp!'

Our research team is currently studying on several meteorological and ecological topics with various MODIS products. At this point, we are trying to compare MOD07-retrieved air temperatures with those measured from 72 locations of national weather stations in Korea.

To do this, we have used MOD07 collection 4, but recently we found MOD07 collection 5 have been already provided. Now I have two questions.

1. We checked the images shown in MODIS official website and compared collection 4 image with collection 5 image at the same day. We found air temperature at near-surface level (i.e. 20th band) mostly appeared on the land part of the collection 4 image. However, Air temperature at near-surface level was black out in the collection 5 image. We are very curious about this phenomenon. Why is it?

2. MOD07 provides 20 bands. If I understand correctly, 20th band is the nearest band to the land surface, and the air pressure of this band indicates 1000 hPa in the image. What does '1000hPa' exactly mean? Is that the height where the air pressure is exactly 1000 hPa? Or... Is the value of 1000hPa just representing a layer (i.e. 975~1025 hPa -> 1000 hPa; 925~975 -> 950 hPa...)?

If I missed something in my explanation and you guys don't understand my situation, please reply me. Thank you in advance!

Harry from Korea

Subject: Re: Question on collection change - MOD07 air profile

Posted by [James Kuyper](#) on Thu, 16 Aug 2007 21:19:52 GMT

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I passed your question on to our resident expert on MODIS Atmosphere code, and he finally got around to responding - here's his response:

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Hello Dirty Harry,

Item 1

All Collection 4 profiles (temperature, moisture, and geopotential height) previously included meaningless below-surface values. Now, in Collection 5, fill values are being used below the surface pressure. This impacts the level 2 profile products as well as some level 3 temperature surfaces (1000 hPa, 850 hPa, and possibly 700 hPa in areas of very high elevation). Since the total precipitable water is integrated only to the surface pressure, this product is not impacted.

Item 2

MOD07_L2 provides 20 pressure levels with pressure level 1 being the highest above sea level (5 mbars). 1000 hPa (hectoPascals) are equal to 1000 millibars of air pressure.

Data referenced to a particular pressure level should, where possible, be interpreted as applying on the surface at the corresponding pressure, not as an average or total over a range of pressure levels.

> From: DirtyHarry
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> To:
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