Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by BillG on Tue, 13 Aug 2013 00:55:05 GMT
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On Thursday, July 25, 2013 7:59:59 AM UTC-6, AMS wrote:
> Hi all,
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> Before I start to code up my own, I was wondering whether anyone had an IDL routine to calculate atmospheric Rayleigh optical depth? Ideally I'm looking for an implementation of the Bodhaine et al (1999) Rayleigh formulae:
http://journals.ametsoc.org/doi/full/10.1175/1520-0426(1999)016%3C1854%3AORODC%3E2.0.CO%3B2
>
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>
> On a related note, does anyone have a routine which returns properties (i.e. p/T/z/gas) for the US Standard Atmospheres?
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> Neither should be particularly difficult, I just thought that as these are fairly well-used things (although a Google search didn't pull anything up) I might be able to save myself from reinventing the wheel. :)
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> Thanks,
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>
> Andy

Andy,

The US Standard Atmosphere plus reference atmospheres--Tropical, Mid-latitude Summer, Mid-latitude Winter, Arctic Summer and Arctic Winter--are available in digital form (Fortran Block Data Statements, sorry) as part of the lblrtm package: http://rtweb.aer.com/lblrtm_frame.html. They are in the routine lblatm.f90. The file contains pressure and temperature as a function of altitude plus profiles of most atmospheric gases. This stuff is ancient (~1970-80's).

You can also find these profiles and more in the "Handbook of Geophysics and Space Environment 1985". The site:
http://www.cnofs.org/Handbook_of_Geophysics_1985/pdf_menu.ht m
has the Handbook in digitized format but you have to cut and paste and reformat to get it into idl. Look in Chapter 14 Standard and Reference Atmospheres

Hope this helps.

Bill Gallery
