Subject: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Andy Sayer on Thu, 25 Jul 2013 13:59:59 GMT
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Hi all,

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

On a related note, does anyone have a routine which returns properties (i.e. p/T/z/gas) for the US Standard Atmospheres?

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. :)

Thanks,

Andy

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:
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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

Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Andy Sayer on Tue, 13 Aug 2013 13:05:37 GMT
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Thanks, Bill. Yes, I've seen that but had hoped someone may have IDL'd (is that a word?) it up. Although old, they're still what's used in our community.

In case anyone else had been curious, I did code up the Bodhaine Rayleigh calculations in the end but need to work a little more on it.

Andy

On Thursday, July 25, 2013 9:59:59 AM UTC-4, 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

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> Thanks,
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> Andy

Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Matteo on Wed, 14 Aug 2013 19:18:40 GMT
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Hi Andy,

I have a bunch of (poorly written?) routines I had written a while ago that could be of use. They are for plotting p/T for the standard atmospheres. Feel free to send me your contact so I can send you more details and the zipped directory.

Cheers,
matteo

Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Andy Sayer on Thu, 15 Aug 2013 13:35:44 GMT
View Forum Message <> Reply to Message

Thanks, email inbound. :)

On Wednesday, August 14, 2013 3:18:40 PM UTC-4, Matteo wrote:
> Hi Andy,
>

>
>
> I have a bunch of (poorly written?) routines I had written a while ago that could be of use. They are for plotting p/T for the standard atmospheres. Feel free to send me your contact so I can send you more details and the zipped directory.
>
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>
> Cheers,
>
> matteo

Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Andy Sayer on Thu, 15 Aug 2013 13:40:19 GMT
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Hi again Matteo,

Afraid I can't see a way to send you a message privately/find your email address. Do you know if there is one? (For spambot crawler purposes I'd rather not have our email addresses out publicly.)

Thanks,

Andy

On Thursday, August 15, 2013 9:35:44 AM UTC-4, AMS wrote:
> Thanks, email inbound. :)
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>
> On Wednesday, August 14, 2013 3:18:40 PM UTC-4, Matteo wrote:
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>> Hi Andy,
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>> Cheers,
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>> matteo

Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Matteo on Thu, 15 Aug 2013 21:23:06 GMT
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You could always try and find me in the directory of the GISS website....It's G like Goddard ;-)

Subject: Re: IDL routines for Rayleigh optical depth/US Standard Atmospheres?
Posted by Andy Sayer on Fri, 16 Aug 2013 13:09:20 GMT
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Heh... it looks like you may have found my name although I can't see how to pull out yours from the Google Groups interface. But there's only one Matteo I can see at GISS so email inbound. :)

Andy

On Thursday, August 15, 2013 5:23:06 PM UTC-4, Matteo wrote:
> You could always try and find me in the directory of the GISS website....It's G like Goddard ;-)
