Subject: Re: Reprojecting an image file derived from Level 1B MODIS HDF
Posted by David Fanning on Mon, 03 Jan 2011 01:42:28 GMT
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Kasia writes:

> I have an image file that I created using IDL from a Level 1B MODIS
> HDF file. I now need to reproject this image file to display in Google
> Earth, but I'm having a hard time figuring out how to do this. The
> code that generated the image file also outputs a lat/lon for each
> value so I thought that would help since there is geographic
> information contained in the image file. But, that hasn't helped me.
>
> I've tried applying the header information from the original HDF file
> to the new image file using ENVI because I know it can read these
> MODIS files, but that hasn't worked too well. ENVI can reproject the
> MODIS HDF file beautifully but I also need it to do the same for the
> new image file.
>
> All of the projection and lat/lon information in the new image file is
> identical to that of the original MODIS HDF file that I can easily
> reproject in ENVI. I just can't figure out how to add that information
> to the image file so ENVI can do the same sort of magic on the new
> file.

Google Earth wants everything in a simple cylindrical
projection with a WGS84 datum. I would just use Map_Proj_Image
to warp your image, in its native projection, to a
Cylindrical projection.

Here is an article that describes how this can be done:

http://www.dfanning.com/map_tips/warpimage.html

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Reprojecting an image file derived from Level 1B MODIS HDF
Posted by Fabzou on Mon, 03 Jan 2011 10:19:37 GMT
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Hi,

On 01/03/2011 02:42 AM, David Fanning wrote:
> Kasia writes:
>
>> I have an image file that I created using IDL from a Level 1B MODIS
>> HDF file. I now need to reproject this image file to display in Google
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> Google Earth wants everything in a simple cylindrical
> projection with a WGS84 datum. I would just use Map_Proj_Image
> to warp your image, in its native projection, to a
> Cylindrical projection.

Yes, but if this is easy with MODIS L2 products which are sinusoidal projection, the L1 products are swath files. I know the EOS_ routines provide easy tools to get the lat and lons for your grid but this is not very nice since the grid has no proper projection.

Probably the EOS_ routines (or David Fannings Catalyst) provide methods to transform your swath files into a nice projection but I am not sure where to find those tools.

Tell me if you find them!

Fabi

Subject: Re: Reprojecting an image file derived from Level 1B MODIS HDF
Posted by Klemen on Mon, 03 Jan 2011 12:21:57 GMT
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Kasia,

there was a discussion, how to use ms2gt MODIS reprojection toolkit
months ago. I pasted there also some code that can be used in directly
IDL. The output is in geotiff that can be then read also in Google
Earth. The problem is, that the routine is slow if you want the output
to have the full MODIS resolution. See if it helps:
http://groups.google.com/group/comp.lang.idl-pvwave/browse_t
hread/thread/688e9587fa29ecb7/2f7820d787d6047f?hl=en&lnk =gst&q=#2f7820d787d6047f

Cheers, Klemen

Subject: Re: Reprojecting an image file derived from Level 1B MODIS HDF
Posted by David Fanning on Mon, 03 Jan 2011 13:59:46 GMT
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Fabzou writes:

> Yes, but if this is easy with MODIS L2 products which are sinusoidal
> projection, the L1 products are swath files. I know the EOS_ routines
> provide easy tools to get the lat and lons for your grid but this is not
> very nice since the grid has no proper projection.
>
> Probably the EOS_ routines (or David Fannings Catalyst) provide methods
> to transform your swath files into a nice projection but I am not sure
> where to find those tools.

Yes, IDL typically gives you no help gridding or
projecting swath files. It is a weakness, in my opinion.
I think ms2gt is your answer here.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Reprojecting an image file derived from Level 1B MODIS HDF
Posted by liamgumley on Mon, 03 Jan 2011 14:58:04 GMT
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On Jan 2, 5:23 pm, Kasia <sia...@gmail.com> wrote:
> Hi,
>
> I have an image file that I created using IDL from a Level 1B MODIS
> HDF file. I now need to reproject this image file to display in Google
> Earth, but I'm having a hard time figuring out how to do this. The
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> reproject in ENVI. I just can't figure out how to add that information
> to the image file so ENVI can do the same sort of magic on the new
> file.
>
> Any help would be greatly appreciated!
> Kasia

MRTSwath is an excellent tool for reprojecting MODIS L1B HDF4 swath
data:

https://lpdaac.usgs.gov/lpdaac/tools/modis_reprojection_tool _swath

If I was you, I would go directly from MODIS L1B HDF4 to
equirectangular projection using MRTSwath. This is the projection that
is used by Google Earth. The MRTSwath command line would look
something like this:

swath2grid -if=infile -gf=geofile -of=outfile -oproj="EQRECT" -kk=CC -
osp=8 -opsz=1000 -off=HDF_FMT

where

infile is the MODIS L1B HDF4 swath image file
geofile is the MODIS L1B HDF4 geolocation file
outfile is the reprojected HDF4 file

By default, MRTSwath will reproject all image arrays in the input

file, and store them in the output file.

If you are interested in creating true color MODIS images in tiled JPEG format for Google Earth, you may wish to check out the "Direct Broadcast Google Earth" or DBGE package available here:

http://cimss.ssec.wisc.edu/imapp/dbge_v1.2.shtml

DBGE reads MODIS Level 1B data and geolocation, and creates tiled MODIS true color images at 250 meter resolution, along with the Keyhole Markup Language (KML) files which allow the imagery to be displayed in Google Earth. To make the MODIS images and KML files viewable on the Internet, you will need a web server where the images and KML files can be stored. It does not have to be the same system where you run DBGE. Any computer which runs a web server (even a Windows computer) may be used to serve the images to Google Earth.

The required input data for DBGE are MODIS Level 1B files in NASA HDF4 format:

MODIS Level 1B 1000 meter resolution (MOD021KM/MYD021KM),
MODIS Level 1B 500 meter resolution (MOD02HKM/MYD02HKM),
MODIS Level 1B 250 meter resolution (MOD02QKM/MYD02QKM),
MODIS Level 1B geolocation (MOD03/MYD03).
All four files are required for each granule or overpass of MODIS data you wish to process with DBGE.

For an example of a real-time web page containing 250m true color images along with the option to view them in Google Earth, please see the University of Wisconsin Direct Broadcast MODIS today web page:

http://ge.ssec.wisc.edu/modis-today/

Cheers,
Liam.
Practical IDL Programming
http://www.gumley.com/
