
Subject: Re: image interplate and overlay lat/lon?

Posted by [David Fanning](#) on Wed, 22 Aug 2012 16:26:11 GMT

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go cats writes:

- > My goal is to take an image(s) and overlay geographic lat/lon information onto the image. I have lat/lon information of four boundaries and tried to create a regular grid using them.
- >
- > I?ve used David?s code to generate a regular lat/lon grid, and tried to interpolate image with gridded lat/lon data.
- >
- > However, outImage looks blank and only geographin lat/lon data are shown with 0 image pixel values. I am working on 8-bit tif images.
- >
- > Would anybody give me some tips how to make this work or what I did wrong?

Maybe there are GeoTiff files that use latitude and longitude values for the tie points and scales, but I've never seen any. All the GeoTiff files I've ever worked with use projected meter values and include information about the map projection in the file.

You shouldn't have to do any image interpolation. Basically, what you want to do it just fit a projected map grid around the image itself.

http://www.idlcoyote.com/map_tips/ephemeral.php

Then, you put the parameters of the grid into the appropriate spots in your geoTiff structure and you are good to go.

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: image interplate and overlay lat/lon?

Posted by [David Fanning](#) on Wed, 22 Aug 2012 16:49:06 GMT

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go cats writes:

> My goal is to take an image(s) and overlay geographic lat/lon information onto the image. I have lat/lon information of four boundaries and tried to create a regular grid using them.
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> I've used David's code to generate a regular lat/lon grid, and tried to interpolate image with gridded lat/lon data.
>
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>
> Would anybody give me some tips how to make this work or what I did wrong?

After doing a bit of research, I guess this is the right way to create a GeoTiff grid with an equal-area cylindrical (called other names!) projection. Although, I really don't know what "Raster Pixel is Point" means. It seems to me a raster pixel describes an area.

Anyway, I don't see any reason for Interpolating the input image. Presumably your grid *describes* the input image. If you really want to make it another size, I would use Congrid. That has the advantage of doing the interpolation correctly and in a way I don't have to worry about it. :-)

As far as not seeing anything, is this because you haven't scaled the data, or because you tried to interpolate byte data, or ... God only knows what.

I would *guess* your image might be upside down. When I work with images and GeoTiff files, I always reverse the Y direction when I read from the Tiff file, and reverse it again when I write it.

```
Write_Tiff, Reverse(outimage,2), GEOTIFF=geoTag
```

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: image interpolate and overlay lat/lon?

Posted by [beardown911](#) on Wed, 22 Aug 2012 17:13:46 GMT

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On Wednesday, August 22, 2012 10:57:48 AM UTC-5, go cats wrote:

> Hello all,

>

>

>

> My goal is to take an image(s) and overlay geographic lat/lon information onto the image. I have lat/lon information of four boundaries and tried to create a regular grid using them.

>

>

>

> I've used David's code to generate a regular lat/lon grid, and tried to interpolate image with gridded lat/lon data.

>

>

>

> However, outImage looks blank and only geographic lat/lon data are shown with 0 image pixel values. I am working on 8-bit tif images.

>

>

>

> Would anybody give me some tips how to make this work or what I did wrong?

>

>

>

> Thanks in advance,

>

> Kim

>

>

>

> P.S. Below is what I've been working on.

>

> ;-----

>

> ; image(0,0)locates at the upper left corner

>

> xOrigin = maxLon

>

> yOrigin = maxLat

>

>

>

> xscale = (maxLon - minLon)/nS

>

> yscale = (maxLat - minLat)/nL

```

>
>
>
>   uvec = Findgen(nS) * xscale + xOrigin
>
>   vvec = yOrigin - (Findgen(nL) * yscale)
>
>
>
>   uarray = Rebin(uvec, nS, nL)
>
>   varray = Rebin(Reform(vvec, 1, nL), nS, nL)
>
>
>
>   outImage = Interpolate(inImage, varray, uarray)
>
> .
>
> .
>
> .
>
> geoTag = { $
>
>     ModelTiepointTag: [0.0, 0.0, 0.0, xOrigin, yOrigin, 0.0], $
>
>     ModelPixelScaleTag: [xscale, yscale, 0.0], $
>
>     GTModelTypeGeoKey: 2, $ ; (ModelType Geographic)
>
>     GTRasterTypeGeoKey: 2, $ ; (RasterPixellsPoint)
>
>     GeographicTypeGeoKey: 4326 $ ; (WGS84)
>
>   }
>
> .
>
> .
>
> WRITE_TIFF, outImage, GEOTIFF = geoTag
>
> ;-----

```

Thanks David for your prompt answer and guide.
Yes, as you pointed, no interpolate is needed for the input image.
Image array and lat/lon grids have the same size.

I'll read through "Map Structures" and try it.

Thank you again and have a nice day!

Kim

Subject: Re: image interplate and overlay lat/lon?

Posted by [Yngvar Larsen](#) on Mon, 27 Aug 2012 10:49:27 GMT

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On Wednesday, 22 August 2012 18:26:11 UTC+2, David Fanning wrote:

> go cats writes:

> Maybe there are GeoTiff files that use latitude and longitude values for
> the tie points and scales, but I've never seen any. All the GeoTiff
> files I've ever worked with use projected meter values and include
> information about the map projection in the file.

<OffTopic>

The near-global digital elevation model data from the NASA Shuttle Radar Topography Mission, see <http://srtm.csi.cgiar.org/>, is distributed on a latitude/longitude grid, as GeoTIFF. Due to its "near-globalness", obviously.

</OffTopic>

--

Yngvar
