Subject: Re: AVHRR Image Mapping Problem
Posted by Matt[1] on Fri, 15 Dec 2006 17:37:14 GMT
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It's been my experience that it's never a good idea to check projection accuracy using country outlines. ESRI shapefiles are notoriously inaccurate when it comes to geolocation. I suspect that similar vector files from other sources will have similar shortcomings, with few exceptions. I actually know for a fact that National Geographic sometimes resorts to stretching or compressing their raster data (using graphics software - Photoshop perhaps?) to match their vector data for their publication maps. What is the source of the country outline you are using as comparison? Is it a vector file? If it is a vector file, could you search for a more accurate one?

If you can, I would suggest using SRTM elevation data (http://glcf.umiacs.umd.edu/data/srtm/, access: http://glcfapp.umiacs.umd.edu:8080/esdi/index.jsp) to check projection accuracy. As far as I know SRTM data has a high degree of geolocational accuracy. Use the SRTM 30 Arc Second, which is also at 1km. Keep in mind that SRTM data is not in Albers projection so you'd have to warp the data. I imagine that this will lead to some misalignments since you are warping SRTM from Geographic coordinates to Albers and the AVHRR data was warped from Goodes Interrupted to Albers, but it should give you a better idea of the relative geolocational accuracy of the two datasets.

If you'd rather use vector data to do the comparison, try the SRTM Water Bodies data http://edc.usgs.gov/products/elevation/swbd.html. This is a very accurate vector file outlining coastlines/waterbodies.

Best
Matt S.

On Dec 15, 11:11 am, Paul van Delst <Paul.vanDe...@noaa.gov> wrote:
> David Fanning wrote:
>> Folks,
>
>> Does anyone have any experience working with AVHRR NDVI
>> image data or Albers map projection? I have obtained
>> the data, which is of the African continent from here:
>
>> ftp://ftp.glcf.umiacs.umd.edu/glcf/GIMMS/Regional/Albers/Afr ica
>
>> The image is in an Albers Conical equal area projection
>> and the centers of the four corner pixels are known from

>> the documentation:
>
>> ; YX coordinates of the four corners (LL, UL, UR, LR)
>> longitude = [-23.49, -24.6, 64.523, 63.414]
>> latitude = [-42.243, 43.711, 43.712, -42.242]
>
>> This is a GeoTiff file, so I also pull the Standard
>> Parallels out of the geotiff information stored in
>> the file (they are -19 and 21).
>
>> I follow the method outlined on this page (which has
>> worked perfectly for a polar stereo map projection),
>> using instead of a Stereo projection, an Albers
>> projection with standard parallels:
>
>> http://www.dfanning.com/map_tips/precipmap.html
>
>> The method *ALMOST* works! :-)
>
>> But the continental outlines do not QUITE line up properly.
>> You can see my result here:
>
>> http://www.dfanning.com/misc/africa.jpg
>
>> Do you think this might be an Albers projection problem?
>> A difference between MAP_PROJ_INIT and MAP_SET? (I have
>> tried different DATUMS with no change in effect.)
>
>> Or, do you think this might just be right? :-(Not my area of expertise, but it sure looks like some sort of projection problem. If it
> was an issue with the data (e.g. AVHRR geolocate issue) then I think it would be shifted
> in one direction everywhere. Your test plot shows a eastward shift on the northern east
> coasts, a westward shift on the northern west coast, and a much smaller westward shift on
> the southern west coast. That suggests to me the data near your standard parallels are
> more "accurate" (by whatever measure) but things get smudged out more and more as you move
> away from them.
>
> paulv
>
> --
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