Subject: Re: ENVI; My Question(s) Posted by Monchaya Piboon on Wed, 10 Oct 2001 05:05:15 GMT View Forum Message <> Reply to Message

Hello all,

Mon

Thanks for replying me, Mark.

Here are my questions.

First, I'm using ENVI to analyze AVHRR images (HRPT format level 1b). The images are downloaded from www.saa.noaa.gov . I need to do some analysis over a small area (about 2x2 degree), with specific latitude and latitude.

(1) The website always yields images larger than your search area, so I need to

find a way to narrow the image down to that specific area.

(2) The problem is I need to know how the pixels are corresponding to latitude and

longitude values. When I read the header file using AVHRR utilities, the header

showed correct 4 geographic corner values. But I could not find a way to use those

values to correctly rectify the images.

(3) How do I georeference the images? Is there any way to georeference, using only

geographic corner values? I don't have to get absolutely correct map projections.

As long as I can estimate the average pixel values over that small area, it's fine.

If you have any suggestions, please let me know.

Monchaya ("Mon") Piboon
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Subject: Re: ENVI; My Question(s)

## Posted by Aaron Birenboim on Fri, 12 Oct 2001 16:44:26 GMT

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## Monchaya Piboon wrote:

> ...

> Hello all,

>

> Thanks for replying me, Mark.

>

- > Here are my questions.
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- > The images are downloaded from www.saa.noaa.gov . I need to do some
- > analysis over a small area (about 2x2 degree), with specific latitude
- > and latitude.
- > (1) The website always yields images larger than your search area, so
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- > (2) The problem is I need to know how the pixels are corresponding
- > to latitude and
- > longitude values. When I read the header file using AVHRR utilities, the
- > header
- > showed correct 4 geographic corner values. But I could not find a way to
- > use those
- > values to correctly rectify the images.

I used to do this for a living.

There was a NOAA publication that described the mathematics. It is rather involved.

We used SGP4 ephemeris to locate the satellite by time, the used attitude information and time to draw a Line of Sight (LOS) from the satellite to the geosphere, and solved for lat/lon.

Do they give you pixel numbers in addition to corner lat/lon values? If so, you could reverse-engineer to satellite position and viewing angles.

It all depends on how accurate you want it.

- > (3) How do I georeference the images? Is there any way to
- > georeference, using only
- > geographic corner values? I don't have to get absolutely correct map
- > projections.
- > As long as I can estimate the average pixel values over that small area,
- > it's fine.

If they give you corner locations... perhaps they are re-sampling the data to a standard map projection. If this is the case, you can simple invert the map projection.

Transverse mercator would be a good choice for AVHRR, since

its fairly close to the way the data is actually collected.

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Aaron Birenboim | Black holes are where G-d divided Albuquerque, NM | by zero.

aaron@boim.com |

boim.com/~aaron | -Steven Wright