Subject: Re: Reproject MODIS automatically using IDL
Posted by James Kuyper on Fri, 02 Sep 2005 17:06:27 GMT
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zamri79@gmail.com wrote:
> Hallo,
>
> Can someone give some instruction or maybe some function/code to
> reproject MODIS data automatically?

What kind of MODIS data are you looking at?

The Level 2 products are arranged in 5-minute granules, and have the same organization as the raw images that the were developed from: 203 or 204 scans per granule, 1354 1km frames per scan, 10 detectors/frame of data collected for each 1km band, 20 detectors by 2 samples/frame collected for each 500m band, and 40 detectors by 4 samples/frame collected for each 250m band.

For best results with level 2 products, be sure to use the Geolocation data at 1km resolution that is present in the MOD03 (Terra) or MYD03 (Aqua) files. Keep in mind that each scan should be treated as a seperate image: consecutive scans overlap each other by 0% at the middle of the scan, increasing steadily with distance from the center to 100% at each end of the scan. It makes absolutely no sense to interpolate anything across scan boundaries. If you need any resolution higher than 5km, you should NOT interpolate the 5km geolocation sub-set that is present in the MOD021KM and MYD021KM files; the interpolation will inherently mis-represent the overlap of consecutive scans.

The MODIS products at level 3 and higher are generally gridded, using the HDF-EOS Grid constructs. IDL provides wrappers for the HDF-EOS routines that will provide you with all the information you need to determine the parameters of the map projection on which the grid points appear as a uniformly spaced rectangular grid. It's fairly straight forward, to use EOS_GD_INTERPOLATE to interpolate the data to an arbitrary set of positions, and in particular to interpolate it to grid points for a different map projection.

As the person responsible for MODIS geolocation, I've had surprisingly little need to actually display images. The only code I could give you is hopelessly specific to the problem I was trying to solve. It was also my first (and so far, only) attempt at a sophisticated widget program, and it stopped working shortly after I stopped needing it, when we upgraded our version of IDL. I don't think it's really a good example for you to copy. Luckily, there are other people on this newsgroup who almost certainly will be responding soon with more specific help on this issue.