Subject: Re: Lambert Projection to Lat Lon
Posted by Mark Hadfield on Thu, 01 Jul 2004 22:00:47 GMT
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Will McCarty wrote:
> Does anyone have any code that will generate a latitude and longitude
> grid given typical lambert projection and grid settings? I'm trying
> to get GRIB data (from the ETA 212 grid) into a format easily compared
> with some satellite and point data I'm using. Without a Lat and Lon
> grid, however, it is generally useless to me. I've got the projection
> info extracted from the file:
>
> Lambert Conf: Lat1 12.190000 Lon1 -133.459000 Lov -95.000000
> Latin1 25.000000 Latin2 25.000000 LatSP 0.000000 LonSP 0.000000
> North Pole (185 x 129) Dx 40.635000 Dy 40.635000 scan 64 mode 8
>
> I'm just looking for a nice piece of code that can dump out a lat an
> lon grid for a known grid size and spacing.

I should think you could write something suitable using the
MAP_PROJ_INVERSE function (introduced in IDL 5.6).

--
Mark Hadfield "Ka puwaha te tai nei, Hoea tatou"
m.hadfield@niwa.co.nz
National Institute for Water and Atmospheric Research (NIWA)

Subject: Re: Lambert Projection to Lat Lon
Posted by willmccarty on Fri, 02 Jul 2004 18:58:27 GMT
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Mark Hadfield <m.hadfield@niwa.co.nz> wrote in message

> I should think you could write something suitable using the
> MAP_PROJ_INVERSE function (introduced in IDL 5.6).

If only it were that easy, unless I'm missing something. Along with the Lambert projection settings mentioned, I'm working on a fixed grid scale of 185x129. I don't see anything for fixed grid sizes in map_proj_init. It also looks for center lat/lon, which I don't believe is given in its entirety.

Will

Subject: Re: Lambert Projection to Lat Lon
Posted by Mark Hadfield on Mon, 05 Jul 2004 00:09:44 GMT
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Will McCarty wrote:

> Mark Hadfield <m.hadfield@niwa.co.nz> wrote in message
>
>> I should think you could write something suitable using the
>> MAP_PROJ_INVERSE function (introduced in IDL 5.6).
>
>
> If only it were that easy, unless I'm missing something. Along with
> the Lambert projection settings mentioned, I'm working on a fixed grid
> scale of 185x129. I don't see anything for fixed grid sizes in
> map_proj_init.

I think you just have to construct the fixed-size grid yourself and supply it to the map_projection function.

> It also looks for center lat/lon, which I don't
> believe is given in its entirety.

There are various Lambert projections mentioned in the documentation. I'm no expert, but the one that sounds closest to what you want is #104, Lambert Conformal Conic. It takes CENTER_LONGITUDE and CENTER_LATITUDE keywords. The following example constructs a 185x129 grid with 10 km spacing and seems to produce reasonable answers.

```
map = map_proj_init('Lambert Conformal Conic', $
                    CENTER_LONGITUDE=90, $
                    CENTER_LATITUDE=30, $
                    STANDARD_PAR1=20, $
                    STANDARD_PAR2=30)
```

```
x0 = 0.
nx = 185
dx = 10.E3

y0 = 0.
ny = 129
dy = 10.e3

x = x0+dx*findgen(nx)
y = y0+dy*findgen(ny)

x2d = rebin(x, nx, ny)
y2d = rebin(reform(y, 1, ny), nx, ny)

lonlat = map_proj_inverse(x2d, y2d, MAP_STRUCTURE=map)

lon = reform(lonlat[0,*], nx, ny)
lat = reform(lonlat[1,*], nx, ny)

print, min(lon), max(lon), min(lat), max(lat)
```

It prints:

```
90.000000       110.97169       28.835737       41.354015
```

--
Mark Hadfield "Ka puwaha te tai nei, Hoea tatou"
m.hadfield@niwa.co.nz
National Institute for Water and Atmospheric Research (NIWA)