
Subject: UTM mapping problems

Posted by [SSO](#) on Thu, 11 Nov 2004 14:50:35 GMT

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I have a problem with the UTM map projection which I cant find any solution for. Perhaps someone could help? I want to plot a UTM map for an approx 300 km area (in x and y) with a model grid (58x74 cells) on top, and I compute the lat/lon of the grid cells. However, when overplotting this grid the grid lines become very uneven and nothing like a straight line at all. Is there any way to avoid this? And why is it behaving like this? The program below shows the problem (at least on my screen!). I'm using IDL 5.5 (yes I know there are upgrades) for Unix, and the 'utm_to_ll' function was taken from Ben Tupperts UTM IDL utilities found on this newsgroup.

many thanks for any help!
Sverre Solberg

PRO Test_utm

;;..Switch to black on white:

loadct, 39

!P.color = 0

!P.background = !D.n_colors-1

;;..SW corner (WGS84 system):

east = 692089.d

north = 3868229.d

dx = 5000.d

nx = 58 + 1

ny = 74 + 1

zone = 34

;;..compute the lon/lat coordinates of the grid cells:

utmgrid = dblarr(nx, ny, 2)

FOR ix = 0, nx-1 DO BEGIN

FOR iy = 0, ny-1 DO BEGIN

utmx = east + ix*dx - dx/2

utmy = north + iy*dx - dx/2

IF KEYWORD_SET(utm) THEN BEGIN

utmgrid(ix, iy, 1) = utmx

utmgrid(ix, iy, 0) = utmy

ENDIF ELSE BEGIN

```

        latlon = utm_to_ll(utmxx, utmy, 'WGS84', zone = zone)
        utmgrid(ix, iy, 1) = latlon(0)
        utmgrid(ix, iy, 0) = latlon(1)
    ENDELSE
ENDFOR
ENDFOR

lat0 = utmgrid(0, 0, 0)
lon0 = utmgrid(0, 0, 1)
lat1 = utmgrid(nx-1, ny-1, 0)
lon1 = utmgrid(nx-1, ny-1, 1)

;..Draw UTM MAP WGS84 (Aka NAD83)
;   from Chuck Gantz via http://gpsy.com/gpsinfo/geotoutm.htm
;   taken from the idl newsgroups
;   assign constant values for WGS 84 datum for lat/lon to UTM
A    = 6378137.d
eccsq = 0.00669439d
k0    = 0.9996d

map_set, 0, 0, 12.7, /trans, limit = [lat0, lon0, lat1, lon1], $
    ellipsoid = [A, eccsq, k0], title = title
map_continents, /coast, /hires, thick = 2

;..Draw the grid lines:
FOR iy = 1, ny DO BEGIN
    x = utmgrid(*, iy-1, 1)
    y = utmgrid(*, iy-1, 0)
    oplot, x, y, color = 0
ENDFOR
FOR ix = 1, nx DO BEGIN
    x = utmgrid(ix-1, *, 1)
    y = utmgrid(ix-1, *, 0)
    oplot, x, y, color = 0
ENDFOR

END

```
