## Subject: Fitting an ellipsoid with MPFITEXPR Posted by johan[1] on Fri, 07 Jan 2011 23:53:52 GMT

View Forum Message <> Reply to Message

I need to fit an ellipsoid to data acquired. I was thinking of using the mpfit routines and have the following:

```
By supplying the eigenvalues and eigenvectors I generate the ellipsoid
with the following function:
function Ellipsoid, evals, evec
no_prof_lat = 24
no_prof_lon = 32
u = indgen(no_prof_lon)*2*!pi/(no_prof_lon-1)
v = indgen(no_prof_lat)*!pi/(no_prof_lat-1)-!pi/2
x = evals[0]*transpose(sin(u)#cos(v))
y = evals[1]*transpose(cos(u)#cos(v))
z = evals[2]*replicate array(sin(v),no prof lon)
return, evec # transpose([[x[*]],[y[*]],[z[*]]))
end
****************
I created the following calling routine:
pro fit_ellipsoid
restore, 'points.dat'; a (3,768) array of extracted points
x = findgen(768)*(70./768)
y = findgen(768)*(66./768)
z = findgen(768)*(100./768)
XVal = transpose([[x],[y],[z]])
evals = [71.1, 66.1, 100.2]
evec = [
     [-0.07, -0.10, 0.99], $
     [-0.43, -0.90, -0.12], $
```

The problem with this routine is that I cannot concatenate the start values into a single array, maybe I on the wrong track in specifying the start values?

The other question is whether the routine MPFITEXPR is really suited for this problem? I do not have dependent and independent values and created the XVal to act as the independent values but it seems a bit superficial to me.

Am I on a wild goose chase or can this work?