
Subject: mpfit questions /strange behavior

Posted by [sirvival](#) on Fri, 01 Oct 2010 10:32:47 GMT

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Hi,

I just started getting used to mpfit.

My question is:

I call mpfit2Dfun as mentioned in the description

I have a function (extra pro).

If I use return, functionname inside the function I get a different result than when I leave the return blank.

What am I doing wrong?

Also when the return is blank it runs much faster.

For demonstration here I reduced the size of my arrays.

My pro is:

```
if keyword_set(fspect1) eq 0 then begin
  rstar = 10
  nx = 1000
  ny = 400
  rotvel = 0.25
  x = findgen(nx)
  y = findgen(ny)
  xpos = nx/2.
  xprof = sqrt(1- (((x-xpos)/rstar)^2 <1))
  ypos = ny/2
  yprof = 1.-0.5*exp(-0.5*((y-ypos)/16)^2)
  spec0 = xprof#yprof
  sspec0 = spec0
  rstar = 100
  For j = fix(xpos)-fix(rstar),fix(xpos)+fix(rstar-1) do begin ;
(linien breite?)
    sh = (j-fix(xpos))*rotvel      ; 1 km/sec rot vel
    sspec0(j,*) = shift(spec0(j,*),sh)
  Endfor
  fspec0 = sspec0
  xprof = indgen(1000)
  yprof = indgen(400)
  psfx0 = exp(-.5/20^2*((findgen(21)-10))^2)
  psfy0 = exp(-.5/10^2*(findgen(11)-5)^2)
  psf0 = psfx0#psfy0
  psf0 = psf0/total(psf0)
  fspec0 = convol(sspec0,psf0,/edge_truncate)
  fspec1 = fspec0 > 0.00005D
  sqrt0 = sqrt(fspec0*100000000D)/100000000D
```

```

sqrt0 = sqrt0 > 0.0000005D

endif else begin
  if keyword_set(fspect1) ne 0 then fspect1=fspect1
endelse
  window,0
  window,1
  wset,0
  shade_surf,fspect1,charsize=2.5
  wset,1
  print,'starting mpfit'

  parinfo=replicate({value:0D,step:0D,relstep:0D},5)
  parinfo[*].value = [10D,20D,10D,100D,0.25D]
  parinfo[*].step = [0,0,0,0,0]
  parinfo[*].relstep = [0.05D,0.05D,0.05D,0.05D,0.005D]
  test =
  mpfit2Dfun('specfunc',xprof,yprof,fspect1,sqrt0,parinfo=parinfo)

end

```

The Function:

```

Function specfunc,x,y,p

x = dindgen(1000)
y = dindgen(400)
xprof = sqrt(1- (((x-500)/p[0])^2 <1))
yprof = 1.-0.5*exp(-0.5*((y-200)/16)^2)
spec = xprof#yprof
rotvel = p[4]
xpos = 500
For j = fix(xpos)-fix(p[3]),fix(xpos)+fix(p[3]-1) do begin ; (linien
breite?)
  sh = (j-fix(xpos))*rotvel ; 1 km/sec rot vel
  spec(j,*) = shift(spec(j,*),sh)
Endfor
specfunc = spec
xdim = dindgen(21)
ydim = dindgen(11)
psfx = exp(-.5/p[1]^2*(xdim-10)^2)
psfy = exp(-.5/p[2]^2*(ydim-5)^2)
psf = psfx#psfy
psf = psf/total(psf)
print,'starting convolution (MPFIT)'
specfunc = convol(spec,psf,/edge_truncate)

```

```
specfunc = specfunc > 0.00005D  
shade_surf,specfunc,charsize=2.5  
return,specfunc
```

end

Thanks.
