
Subject: Re: mpfit: multivariate fit

Posted by [Craig Markwardt](#) on Fri, 11 May 2007 08:05:58 GMT

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Dave <Confused.Scientist@gmail.com> writes:

```
> Thanks hradilv, that does help. I also found that I could get it to
> work if I expand the dimensions and make everything a vector prior to
> fitting. I'd be interested in knowing from Craig if your fix is ok as
> I greatly prefer it to the fiddling below.
>
> function trans, K, X=x, Y=y, err=err, forward=fw
>
>   kk = reform(K, 3, n_elements(k)/3)
>   xx = reform(x, 3, n_elements(x)/3)
>
>   model = KK # xx
>
>   model = reform(model, n_elements(model))
>
>   if keyword_set(fw) then return, model else return, (y-model)/err
> end
```

David Fanning is right. You can't simply recode the function like you did. According to the documentation:

```
; In general there are no restrictions on the number of dimensions in
; X, Y or ERR. However the deviates *must* be returned in a
; one-dimensional array, and must have the same type (float or
; double) as the input arrays.
```

The output of your function *must* be one dimensional :-)
Just reform() it before you return it.

By the way, I would say that fitting all 9 matrix components is a sure path to problems. At the very least, you should enforce the constraint that the matrix must be symmetric. If there is a simple rotation (no scale or skew factors), then I would suggest using Euler angles, or even better, use quaternions and fit the quaternion components. You can use QTVROT in my library to apply a quaternion rotation to a 3-vector.

Good luck!
Craig

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