Subject: Re: Constrained fit of a straight line: fixed intercept
Posted by David Grier on Fri, 27 Aug 2010 08:39:17 GMT
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On 8/27/10 12:36 AM, Joe Daal wrote:
> Hi,
>
> I am not sure how easy this problem is, but it sure gave me hell
> today.
> I have the following vector arrays: X, Y,& Y_errors. There are 5
> elements in each and they do form a nice line describes by Y = A + BX.
> I need to fit this line with B as a free parameter and constrain A to
> pass by the the third point.
> So the problem narrows down to one parameter as: Y = (Y0 - BX0) + BX,
> whre Y0 and B0 and the third point values (i.e., X[2] and Y[2]).
> I tried using MPFIT with the PARINFO keyword. It just didn't work.
> Any ideas? Thanks....
>
> -Joe

How about:

```
pivot = 2
dy = y - y[pivot]
dx = x - x[pivot]
w = where(dx ne 0, count)
if count gt 0 then $
 B = mean(dy[w]/dx[w]) $
else $
 B = 0.
```

TTFN,

David

Subject: Re: Constrained fit of a straight line: fixed intercept
Posted by David Grier on Fri, 27 Aug 2010 10:45:18 GMT
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On 8/27/10 4:39 AM, David Grier wrote:
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> B = 0.

... and if you want to weight the results by the experimental errors:

weights = abs(1./y_errors[w]) ; for instrumental errors
B = mean(weights * dy[w] / dx[w]) / mean(weights)

TTFN,

David

Subject: Re: Constrained fit of a straight line: fixed intercept
Posted by Joe Daal on Fri, 27 Aug 2010 20:57:57 GMT
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On Aug 27, 5:45 am, David Grier <david.gr...@nyu.edu> wrote:
> On 8/27/10 4:39 AM, David Grier wrote:
>
>
>
>> On 8/27/10 12:36 AM, Joe Daal wrote:
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>
> TTFN,
>
> David

Great! Thank you.
-Joe
