Subject: Re: xerr
Posted by Vince Hradil on Wed, 17 Dec 2008 21:29:43 GMT
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On Dec 17, 2:27 pm, lakshmi <lax...@gmail.com> wrote:
> Hi,
>
> I've been using mpfitfun to fit measured values of period (y) and
> distances (x) in a linear equation y = a + bx.
> I would like to know if we can include the measured uncertainties in x
> values too?
>
> Thanks,
>
> Lakshmi

Well, since it's a linear problem you should probably choose a linear solution, not mpfitfun. Also, you need to take into account the variance and covariance for both x and y, so you need to solve this with care.

If you google "fitting a straight line when both variables are subject to error" you'll get a lot of info: http://tinyurl.com/54m8l3

Subject: Re: xerr
Posted by pgrigis on Wed, 17 Dec 2008 22:08:38 GMT
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This is discussed for example in
section 15.3 in edition 3 of the book
"numerical recipes".

Ciao,
Paolo

Vince Hradil wrote:

>> Hi,
>>
>> I've been using mpfitfun to fit measured values of period (y) and

>> I would like to know if we can include the measured uncertainties in x
>> values too?
>>
>> Thanks,
>>
>> Lakshmi

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> Well, since it's a linear problem you should probably choose a linear
> solution, not mpfitfun. Also, you need to take into account the
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Subject: Re: xerr
Posted by laxsri on Wed, 17 Dec 2008 22:34:28 GMT
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Hi,
>
> Well, since it's a linear problem you should probably choose a linear
> solution, not mpfitfun. Also, you need to take into account the
> variance and covariance for both x and y, so you need to solve this
> with care.

I was also intending to fix the intercepts and calculate the gradients
and uncertainties. That is why I chose mpfitfun.
I used fitexy to obtain the best fit line with uncertainties in both
intercept and gradient.

> If you google "fitting a straight line when both variables are subject
> to error" you'll get a lot of info:http://tinyurl.com/54m8l3

Thanks for the link!

Lakshmi

Subject: Re: xerr
Posted by laxsri on Wed, 17 Dec 2008 22:41:51 GMT
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On Dec 18, 9:08 am, Paolo <pgri...@gmail.com> wrote:
> This is discussed for example in
> section 15.3 in edition 3 of the book
> "numerical recipes".
>
Not sure how to constrain the intercept though...
It seemed rather easy to use mpfitfun! Wondering if that is wrong?

Lakshmi

> Ciao,
> Paolo
>
> Vince Hradil wrote:
>> On Dec 17, 2:27 pm, lakshmi <lax...@gmail.com> wrote:
>>> Hi,
>
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>> to error" you'll get a lot of info:http://tinyurl.com/54m8l3

Subject: Re: xerr
Posted by wlandsman on Thu, 18 Dec 2008 13:31:56 GMT
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On Dec 17, 5:08 pm, Paolo <pgri...@gmail.com> wrote:
> This is discussed for example in
> section 15.3 in edition 3 of the book
> "numerical recipes".
>

I have an IDL implementation of the "Numerical Recipes" algorithm at
http://idlastro.gsfc.nasa.gov/ftp/pro/math/fitexy.pro

--Wayne

Subject: Re: xerr
Posted by Jeremy Bailin on Thu, 18 Dec 2008 14:49:43 GMT
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On Dec 17, 5:08 pm, Paolo <pgri...@gmail.com> wrote:
> This is discussed for example in
> section 15.3 in edition 3 of the book
> "numerical recipes".
>
> Ciao,
> Paolo
>
> Vince Hradil wrote:
>> On Dec 17, 2:27 pm, lakshmi <lax...@gmail.com> wrote:
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>> to error" you'll get a lot of info:http://tinyurl.com/54m8l3
>
>

On a complete tangent... how is the third edition compared to the
second? I've been hemming and hawing about picking it up.

-Jeremy.

Subject: Re: xerr
Posted by Craig Markwardt on Fri, 19 Dec 2008 03:24:28 GMT
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On Dec 17, 5:08 pm, Paolo <pgri...@gmail.com> wrote:
> This is discussed for example in
> section 15.3 in edition 3 of the book
> "numerical recipes".

I've used the Numerical Recipes hack for X errors successfully before.

As mentioned, orthogonal distance regression is the real way to do this, but unfortunately MPFIT does not support this. [It could in principle with a lot of work, but doesn't in practice.]

Craig
