Subject: Curve Fitting
Posted by Ian E. Sprod on Wed, 08 Feb 1995 23:57:31 GMT
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I am trying to fit a curve to some data using IDL but am
having a devil of a time trying to figure out which of
POLY_FIT, POLYFITW and SVDFIT to use. All I need is a quadratic fit!

Any ideas which is best/fastest/most accurate?

Thanks,

Ian

Subject: Re: curve fitting
Posted by David Fanning on Mon, 03 May 2004 12:26:44 GMT
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maarten writes:

> I am having some trouble fitting a function using curvefit.
> The function contains two parameters that need to be fitted but also
> contains two other parameters that don't need to be fitted but have a
> fixed value. This is not a problem yet, unless you place it in a for
> loop where the fixed parameters need to be changed when fitting another
> series of points. I haven't found a way to supply the fittingroutine
> these variables. Does anyone know of a way to solve this problem.

Yes, abandon CURVEFIT and get on over to Craig's site and pick
up MPFIT, the fitting software the professionals use. :-)

    http://cow.physics.wisc.edu/~craigm/idl/fitting.html

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: curve fitting
Posted by jbondurant on Mon, 03 May 2004 18:37:54 GMT
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Turn your data into smooth curves automatically with TableCurve 2D by
Systat Software, Inc.

http://www.systat.com/products/TableCurve2D/

http://groups.yahoo.com/group/TableCurve/

David Fanning <david@dfanning.com> wrote in message
news:<MPG.1affe871a17e9952989736@news.frii.com>...
> maarten writes:
>
>> I am having some trouble fitting a function using curvefit.
>> The function contains two parameters that need to be fitted but also
>> contains two other parameters that don't need to be fitted but have a
>> fixed value. This is not a problem yet, unless you place it in a for
>> loop where the fixed parameters need to be changed when fitting another
>> series of points. I haven't found a way to supply the fittingroutine
>> these variables. Does anyone know of a way to solve this problem.
>
> Yes, abandon CURVEFIT and get on over to Craig's site and pick
> up MPFIT, the fitting software the professionals use. :-)
>
>   http://cow.physics.wisc.edu/~craigm/idl/fitting.html
>
> Cheers,
>
> David

Subject: Re: curve fitting
Posted by Craig Markwardt on Tue, 04 May 2004 05:38:40 GMT
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jbondurant@blabstat.com (Joel Bondurant) writes:

> Turn your data into smooth curves automatically with Blazzleblat 2D by
> Blabstat Software, Inc.
...

And your posting has to do with IDL ... HOW?

Craig

[Names changed]

--

```
 --------------------------------------------------------- -------------
```
Craig B. Markwardt, Ph.D.   EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
```
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```

Subject: Re: curve fitting
Posted by Paul Van Delst[1] on Tue, 04 May 2004 13:59:04 GMT
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Craig Markwardt wrote:
> jbondurant@blabstat.com (Joel Bondurant) writes:
>
>
>> Turn your data into smooth curves automatically with Blazzleblat 2D by
>> Blabstat Software, Inc.
>
> ...
>
> And your posting has to do with IDL ... HOW?

I actually went to the advertised page to have a looksee. It's pretty impressive in a
whizbang sort of way, although I'll admit to still being relatively inexperienced with the
  nuances of model and curve fitting. What I found slightly disturbing was the implication
(although I may have misread) that this software can automagically solve your problem,
i.e. you throw your data at it and it comes up with a fit. Isn't this the scientific
method, but backwards?

paulv

Subject: Re: curve fitting
Posted by David Fanning on Tue, 04 May 2004 14:08:55 GMT
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Paul Van Delst writes:

> I actually went to the advertised page to have a looksee. It's pretty impressive in a
> whizbang sort of way, although I'll admit to still being relatively inexperienced with the
> nuances of model and curve fitting. What I found slightly disturbing was the implication
> (although I may have misread) that this software can automagically solve your problem,
> i.e. you throw your data at it and it comes up with a fit. Isn't this the scientific
> method, but backwards?

No, no. This is a well-known and modern technique

called Thinking For You. All the Microsoft products
use it. It's great! :-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: curve fitting
Posted by Paul Van Delst[1] on Tue, 04 May 2004 15:28:02 GMT
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David Fanning wrote:
> Paul Van Delst writes:
>
>
>> I actually went to the advertised page to have a looksee. It's pretty impressive in a
>> whizbang sort of way, although I'll admit to still being relatively inexperienced with the
>> nuances of model and curve fitting. What I found slightly disturbing was the implication
>> (although I may have misread) that this software can automagically solve your problem,
>> i.e. you throw your data at it and it comes up with a fit. Isn't this the scientific
>> method, but backwards?
>
>
> No, no. This is a well-known and modern technique
> called Thinking For You. All the Microsoft products
> use it. It's great! :-)

Ha ha! For full disclosure I _was_ going to mention my bias against Microsoft software
(and by extension most other windows apps) for just that reason but I thought, no - that
wouldn't be fair since IDL is also a windows based app and sure as sh*t it don't do the
thinking for me (based on my unix-only IDL experience...)

paulv

Subject: Re: curve fitting
Posted by b_gom on Wed, 05 May 2004 20:41:29 GMT
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I'm not sticking up for blabstat, but it is sometimes useful to find a
simple parametric function that best describes a data set, without

worrying about the underlying physics. I have used the shareware
"Curve Expert" program in the past, which can automatically find the
best fit from a wide range of function families. It can be downloaded
from http://www.ebicom.net/~dhyams/cftp.htm , among other places.
You can use this program to tell you what function best models your
data, and then fit with that function in IDL..

Brad

Craig Markwardt <craigmnet@REMOVEcow.physics.wisc.edu> wrote in message
news:<onpt9kzr8f.fsf@cow.physics.wisc.edu>...
> jbondurant@blabstat.com (Joel Bondurant) writes:
>
>> Turn your data into smooth curves automatically with Blazzleblat 2D by
>> Blabstat Software, Inc.
> ...
>
> And your posting has to do with IDL ... HOW?
>
> Craig
>
> [Names changed]

Subject: Re: Curve Fitting
Posted by Craig Markwardt on Wed, 13 May 2009 15:19:47 GMT
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Hi David--

On May 11, 9:47 am, David Fanning <n...@dfanning.com> wrote:
> Folks,
>
> Here is an excellent article on the perils of curve fitting
> that I think an awful lot of IDL programmers would do well
> to read, especially in light of some recent questions on
> the newsgroup:
>
>   http://tamino.wordpress.com/2009/05/11/dangerous-curves/

Yep, nice article. The key point is that when doing curve fitting,
the choice of model is crucial to the analysis.

Ultimately, least squares fitting can only answer the question, is
this curve *consistent* with my data or not? The parameter values are
almost secondary. There may be many other curves that are also
consistent with the data. By not considering them, our interpretation

of the results will have a hidden bias.

If possible, it's best to choose a model based on previously known qualities of the system being studied. [...which the article author did not.]

Craig