Subject: Re: fitting contours with ellipse
Posted by fburton on Tue, 05 Jan 2010 11:22:52 GMT
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In article <2219a304-4c24-4d4d-ab33-4e8c2dce92de@m25g2000yqc.googlegroups.com>,
collinritzinger <b0burk02@gmail.com> wrote:
> I have several contour maps and I'd like to have a more quantitative
> way of describing how 'peaked' or 'boxy/circular' they are. I was
> thinking of doing this by fitting an ellipse to the contours and
> examining best fit parameters. People have done this for blobs before
> (see http://www.dfanning.com/ip_tips/fit_ellipse.html) but I'm not so
> sure how to go about it for contours. Do you all have any ideas?
> Thanks!

One requirement for a 'good fit' in this case is to have as
much of the ellipse represented by data points as possible
(i.e. no big gaps). The set of coordinates returned by CONTOUR
using the PATH_INFO keyword should be well-spaced at least;
whether there are enough coordinates will depend on the size
of the contour path in relation to the grid spacing. I would
simply feed the coordinates to the ellipse-fitting routine
and see if it produces sensible results for your data.

Francis

Subject: Re: fitting contours with ellipse
Posted by David Fanning on Tue, 05 Jan 2010 13:02:40 GMT
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Francis Burton writes:

> One requirement for a 'good fit' in this case is to have as
> much of the ellipse represented by data points as possible
> (i.e. no big gaps). The set of coordinates returned by CONTOUR
> using the PATH_INFO keyword should be well-spaced at least;
> whether there are enough coordinates will depend on the size
> of the contour path in relation to the grid spacing. I would
> simply feed the coordinates to the ellipse-fitting routine
> and see if it produces sensible results for your data.

Alas, the problem with the contours that come from
the contour command is that some of the time they
are NOT "well spaced". In fact, they are vectors.
So, if a contour segment is straight (say along an edge)
there will be no points at all between the ends
of the straight segment.

It was to get around this problem (among others) that
I wrote ArcSample, which samples a closed curve at
approximately equal intervals. It essentially
digitizes a contour line so you can do something
useful with it later. (I used it in my ActiveContour
program.)

   http://www.dfanning.com/programs/arcsample.pro

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: fitting contours with ellipse
Posted by fburton on Tue, 05 Jan 2010 15:55:34 GMT
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In article <MPG.25ace65126e824569896c7@news.giganews.com>,
David Fanning <news@dfanning.com> wrote:
> Alas, the problem with the contours that come from
> the contour command is that some of the time they
> are NOT "well spaced". In fact, they are vectors.
> So, if a contour segment is straight (say along an edge)
> there will be no points at all between the ends
> of the straight segment.

Good point - but for a complete set of edge points to fit
an ellipse well would require it to be exceedingly eccentric.
A likely alternative is that part of the ellipse lies outside
the contoured area, in which case not having any points along
the straight edge would give a better fit.

> It was to get around this problem (among others) that
> I wrote ArcSample, which samples a closed curve at
> approximately equal intervals. It essentially
> digitizes a contour line so you can do something
> useful with it later. (I used it in my ActiveContour
> program.)
>
>   http://www.dfanning.com/programs/arcsample.pro

That's neat!

Francis

Subject: Re: fitting contours with ellipse
Posted by natha on Fri, 08 Jan 2010 18:24:08 GMT
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Hi,

I use mpfit and mpfitellipse from NASA/GSFC.http://
cow.physics.wisc.edu/~craigm/idl/idl.html
Maybe it can helps you!

Happy new year,
nata