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Subject: Ellipse fitting?

Posted by [robparker23](#) on Tue, 12 May 2009 20:36:20 GMT

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Hi,

I was hoping that someone could help with this.

I have a satellite footprint which is more or less elliptical. I have the 4 coordinates of the top, bottom, left and right-most points and want to fit an ellipse to these 4 coordinates.

I've put a diagram here to explain: <http://img217.imageshack.us/img217/5048/ellipse.png>

I've googled this quite a bit and there seem to be lots of ways to fit ellipses to complicated data sets using techniques like optimal estimation but I can't find an easy/quick way of doing it. To do this manually I think I could just take the equation for an ellipse and adjust it to fit but I need to do this automatically for a large number of points where the shape of the ellipse will change depending on the location.

This gets slightly more complicated (doesn't it always) as the shape may not quite be an ellipse due to the geometry of the satellite (it might have one side slightly "fatter" than the other) and it might be tilted at an angle (so not horizontal).

Does IDL have any ellipse fitting capabilities built in or is anyone familiar with a solution that might work?

Cheers

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