Subject: Re: Least squares fit of a model to a skeleton consisting out of 3D points.
Posted by Johan on Tue, 02 Dec 2008 15:50:20 GMT
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On Nov 27, 1:53 pm, Jeremy Bailin <astroco...@gmail.com> wrote:
> On Nov 26, 3:40 am, Johan <jo...@jmarais.com> wrote:
>
>
>
>
>
>> On Nov 24, 4:35 pm, Wox <s...@nomail.com> wrote:
>
>>> On Mon, 24 Nov 2008 17:22:53 +0100, Wox <s...@nomail.com> wrote:
>>>> X=[X,Y,Z] ; (you need to extract the seperate X, Y and Z in your user
>>>> routine)
>>>> Y=replicate(1,n_elements(X))
>
>>> Woops, redefined X :-). I mean Y=replicate(1,n3Dpoints).
>
>> Thank you, it seems that krellipsoidfit.pro works rather well. I do
>> have another question regarding this and will appreciate if can advise
>> me.
>
>> I need to get the 3 angles and axis lengths and use the following code
>> to get it from the given eigenvalues (evals) and eigenvectors (evec):
>
>> semia = sqrt(evals[0]) * 2.0
>> semib = sqrt(evals[1]) * 2.0
>> semic = sqrt(evals[2]) * 2.0
>
>> a = semia * 2.0
>> b = semib * 2.0
>> c = semic * 2.0
>> semiAxes = [semia, semib, semic]
>> axes = [a, b, c]
>
>> eigenvector = evec[*,0]
>> eigenvector2 = evec[*,1]
>> eigenvector3 = evec[*,2]
>
>> orientation1 = atan(eigenvector1[1], eigenvector1[0])*!RADEG
>> orientation2 = atan(eigenvector2[1], eigenvector2[0])*!RADEG
>> orientation3 = atan(eigenvector3[1], eigenvector3[0])*!RADEG
>> angles = [orientation1, orientation2, orientation3]
>
>> Is this correct or do I need made some adjustments, especially to the
>> orientation?

>
>> Thanks
>> Johan Marais
>
> That does indeed give you 3 angles, but it doesn't fully specify the
> orientation. Which angles are you looking for?
>
> Incidentally, I'm not quite sure why you have that factor of 2 in the
> definition of semia etc., but I suppose it depends what went into the
> matrix you're diagonalizing...
>
> -Jeremy.- Hide quoted text -
>
> - Show quoted text -

I tried different ways of getting the angles but it seems I am still
at a lost. The angles I am looking for is as follow:
If you have an orthogonal reference framework and the ellipsoid are
tilted in it. I am looking for the angles that the 3 axes of the
ellipsoid make with the xy-plane, the yz-plane and yz-plane of the
reference framework. I assume that for each of them you need to use
all 3 relevant eigenvectors for each axes of the ellipsoid, or it
could be only 2?
