Subject: Re: Least squares fit of a model to a skeleton consisting out of 3D points.
Posted by Johan on Wed, 03 Dec 2008 14:37:11 GMT
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On Dec 3, 2:14 pm, Jeremy Bailin <astroco...@gmail.com> wrote:
> On Dec 2, 10:50 am, Johan <jo...@jmarais.com> wrote:
>
>
>
>
>
>> 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?
>
> That's 9 angles, so I'm still not quite sure what you mean. Maybe the
> Euler angles would be useful?
>
> -Jeremy.- Hide quoted text -
>
> - Show quoted text -

Yes, I believe the Euler angles described the 3 I am after.

Johan
