Subject: Re: find a plane in a 3D plot
Posted by Nicola on Fri, 12 Sep 2008 16:20:43 GMT
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On Sep 12, 4:47 pm, Wox <nom...@hotmail.com> wrote:
> On Fri, 12 Sep 2008 02:54:09 -0700 (PDT), Nicola
>
> <nicola.viane...@gmail.com> wrote:
>> I have to find a
>> way to identify this plane and the direction perpendicular to this
>> plane in the more accurate way as possible.
>
> The code below is one way of doing things. The resulting plane is
> defined with a normal vector and a point.
>
> pro test
> x=[1.,0,1,2,3,4]
> y=[0.,1,1,2,3,4]
> z=[2.,2,2,2,2,2]
>
> ; Orthogonal distance regression
> ; check e.g.http://mathforum.org/library/drmath/view/63765.html
>
> ; Centroid: orthogonal distance
> ; regression plane goes through it
> n=n_elements(x)
> data=transpose([[x],[y],[z]])
> centroid=total(data,2)/n
>
> data[0,*]-=centroid[0]
> data[1,*]-=centroid[1]
> data[2,*]-=centroid[2]
>
> SVDC, data, W, U, V
>
> smallest_singularvalue=min(W,ind)
> plane_normal=reform(V[ind,*])
>
> print,'Orthogonal distance regression plane'
> print,'1. goes through: ',centroid
> print,'2. has normal: ',plane_normal
> end;pro test

Thank you all. This was something I was thinking about, essentially similar to what is called Minimum variance Method which is a method used for Cluster data satellite. Now I have a perhaps smallest problem, which is the graphics..... How I put the found plane on the same 3D box? I know perhaps this is a stupid question but my knowledge

of IDL 3D plotting is quite scarce....
regards to all of you for your quick reply
Nicola