
Subject: Re: coordinates & transforms & plotting
Posted by [David Fanning](#) on Mon, 28 Feb 2005 13:19:51 GMT
[View Forum Message](#) <> [Reply to Message](#)

Ralf Schaa writes:

- > How does IDL determines the coordinate system when plotting in 3D ?
- > Is the matrix in T3D ... ?

The 3D transformation matrix is stored in !P.T.

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: coordinates & transforms & plotting
Posted by [Ralf Schaa](#) on Mon, 28 Feb 2005 13:23:08 GMT
[View Forum Message](#) <> [Reply to Message](#)

Thanks David!

David Fanning wrote:

- > Ralf Schaa writes:
 - >
 - >
 - >> How does IDL determines the coordinate system when plotting in 3D ?
 - >> Is the matrix in T3D ... ?
 - >
 - >
 - > The 3D transformation matrix is stored in !P.T.
 - >
 - > Cheers,
 - >
 - > David
-

Subject: Re: coordinates & transforms & plotting
Posted by [Ralf Schaa](#) on Mon, 28 Feb 2005 13:35:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

Okay folks,

1.)

I have refreshed linear algebra and if I have it right, there is not a unique basis for vectors or points in 3D...so what does IDL take as a basis when plotting in 3D?

2.)

And how can I manipulate that in a way it takes *my* basis?

Cheers

-Ralf

Ralf Schaa wrote:

> Dear all,

>

> How does IDL determines the coordinate system when plotting in 3D ?

> Is the matrix in T3D ... ?

>

> Cheers

> -Ralf

>

> (After transforming an Orbit into a new frame, the Boxes of the RDplot

> are not like expected ...)

Subject: Re: coordinates & transforms & plotting

Posted by [David Fanning](#) on Mon, 28 Feb 2005 14:28:06 GMT

[View Forum Message](#) <> [Reply to Message](#)

Ralf Schaa writes:

> Okay folks,

>

> 1.)

> I have refreshed linear algebra and if I have it right, there is not a

> unique basis for vectors or points in 3D...so what does IDL take as a

> basis when plotting in 3D?

I'm not sure what a "basis" is, but a coordinate frame consists of an origin (perhaps what you are calling the basis) and three orthogonal axes. The origin of the IDL coordinate system is the (0,0,0) point in the lower-left corner of the window, with the X axis horizontal, the Y axis vertical, and the Z axis coming out toward you.

> 2.)
> And how can I manipulate that in a way it takes *my* basis?

Typically, in IDL you set up the 3D transformation matrix with calls to T3D. You set a new "origin" with the TRANSLATE keyword.

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: coordinates & transforms & plotting
Posted by [Ralf Schaa](#) on Mon, 28 Feb 2005 14:58:16 GMT
[View Forum Message](#) <> [Reply to Message](#)

Thanks again, David. I try figure that out with T3D.

David Fanning wrote:

> I'm not sure what a "basis" is, but a coordinate frame
> consists of an origin (perhaps what you are calling
> the basis) and three orthogonal axes. The origin of
> the IDL coordinate system is the (0,0,0) point in
> the lower-left corner of the window, with the X axis
> horizontal, the Y axis vertical, and the Z axis
> coming out toward you.

That's the interesting part...didn't know that the 'plot-view' frame is this vector base I was talking about (which is spanning up the vector space)

Cheers (in german this is 'Prost' and we drink a beer, isn't it?) ,
-Ralf

>
>> 2.)
>> And how can I manipulate that in a way it takes *my* basis?
>
>
> Typically, in IDL you set up the 3D transformation
> matrix with calls to T3D. You set a new "origin" with
> the TRANSLATE keyword.

>
> Cheers,
>
> David
>
