
Subject: Re: using irregularly spaced coordinates with ray-casting in iVolume
Posted by [Kenneth P. Bowman](#) on Wed, 11 Mar 2009 01:59:43 GMT
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In article

<876f0fb1-0416-4f50-9377-c36f914f4c1b@a5g2000pre.googlegroups.com>,
"brian.niebergal@gmail.com" <brian.niebergal@gmail.com> wrote:

> Hello everyone.
>
> I've seen a few similar posts to this one, but there doesn't seem to
> be a good (easy) answer that I can understand. :)
>
> How does one use irregularly spaced (xyz) coordinates with the
> IDLgrVolume ray-casting volume renderer?
> I haven't used any of IDL's 3D features before and so I'm kind of
> lost. Normally, using the "contour" command I would type something
> like:
>
> contour,3Ddata_slice,dim_x,dim_y
>
> where dim_x and dim_y are my irregularly spaced coordinates.
>
>
> If it helps, my data isn't completely irregular, that is to say there
> is an equation that dictates the spacing between adjacent coordinate
> points (involves a step function half-way through the data though).
>
> I realize the algorithm for accomplishing this with ray-casting is not
> trivial, but if anyone renders hydrodynamical simulations, using
> adaptive mesh refinement, they must also need this feature.
>
> It seems this is related to why the "logarithmic axis" option in axis
> properties is greyed out?
>
> Thank you,
> - Brian Niebergal
> PhD Student
> University of Calgary
> www.capca.ucalgary.ca/~bniebergal/

I am pretty sure that the volume renderer requires regular grids.

My suggestion is to create a regular grid from your irregular data
by interpolation.

Ken Bowman

Subject: Re: using irregularly spaced coordinates with ray-casting in iVolume
Posted by [Jeremy Bailin](#) on Wed, 11 Mar 2009 15:13:51 GMT
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On Mar 10, 9:59 pm, "Kenneth P. Bowman" <k-bow...@null.edu> wrote:

> In article

> <876f0fb1-0416-4f50-9377-c36f914f4...@a5g2000pre.googlegroups.com> ,

>

>

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> Ken Bowman

How many levels of refinement do you have? If it's not too many, you could re-grid everything down to the finest grid level to get a regularly-spaced grid, like Ken suggests. Of course, probably the reason you're using AMR is because doing the entire volume at the highest resolution is impossible. ;-) So that may not work so well.

-Jeremy.
