Subject: Re: Optics simulation with IDL?
Posted by tandp on Thu, 17 May 2001 22:37:59 GMT
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xvolume? slicer3?

In article <Pine.LNX.4.21.0105171244420.12011-100000@twins.dna.fi>, karri
<karri@dna.fi> wrote:

> Hi guys,
>
> Does IDL have functions for visualizing how light travels through some
> transparent plastic objects?
>
> --
> Cheers,
>
> Karri Kaksonen

Subject: Re: Optics simulation with IDL?
Posted by karri on Fri, 18 May 2001 11:11:30 GMT
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On Thu, 17 May 2001, Mike wrote:
> xvolume? slicer3?

My need is some kind of ray-tracer. Most IDL volume tools can just build
3d objects with or without transparency. I sort of hoped that there would
be something available for doing ray-tracing as well. But I could not find
anything useful.

Time to start learning to use some Linux ray-tracer then...

> In article <Pine.LNX.4.21.0105171244420.12011-100000@twins.dna.fi>, karri
> <karri@dna.fi> wrote:
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>> transparent plastic objects?

--
Thanks,

Karri

Subject: Re: Optics simulation with IDL?
Posted by Randall Skelton on Fri, 18 May 2001 23:59:25 GMT

I have used IDL & MATLAB for simulating/modeling optics in different optical systems. With that being said, I don't really recommend doing it in either language as there are no pre-fabricated tools for doing it quickly. Basically, it amounts to writing code for a bunch of optical matrices (which you can find in any good optics textbook) and multiplying them appropriately. "Ray tracing" is nothing more than matrix operations which both IDL and MATLAB can do easily. However, a programmer must first understand optical matricies to write code for this...

You should look into some of the free optics packages available on the web (or something like zemax if you want to do real optics calculations). However, IMHO you will need a firm grasp of general optics theory to use any of these tools effectively. Perhaps if you post more hints as to exactly what you are trying to do, I can dig through my code and find a suitable example to post.

Cheers,
Randall

On Fri, 18 May 2001, karri wrote:

> Date: Fri, 18 May 2001 14:11:30 +0300
> From: karri <karri@dna.fi>
> Newsgroups: comp.lang.idl-pvwave
> Subject: Re: Optics simulation with IDL?
>
> On Thu, 17 May 2001, Mike wrote:
>> xvolume? slicer3?
>
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>> In article <Pine.LNX.4.21.0105171244420.12011-100000@twins.dna.fi>, karri
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> Thanks,
>
> Karri
>

>
>

Subject: Re: Optics simulation with IDL?
Posted by karri on Sat, 19 May 2001 15:59:18 GMT
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On Sat, 19 May 2001, Randall Skelton wrote:
> However, IMHO you will need a firm grasp of general optics
> theory to use any of these tools effectively. Perhaps if you post more
> hints as to exactly what you are trying to do, I can dig through my code
> and find a suitable example to post.

My problem is that I have made a light guide to transfer the light from 5 leds to the front panel of a box. In this array the light leaks a lot from one light guide to the other. I tried to fix this by putting opaque material all around the guides but this approach reduced the intensity a _lot_.

So I would like to do some simulations of what would happen if I use a round piece of plastic instead of a guide made out of polygons. It would also be nice to see if I could reduce cross-talking by forming some weird angles from the connecting plastic pieces.

--
Regards,

Karri Kaksonen