Subject: Looking for some advise
Posted by msingh2 on Sun, 03 Oct 1999 07:00:00 GMT
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Hi,

I have a set of data that I want to visualise with IDL. I have a porous medium which is represented as a 3D cubic structure of spherical pores connected by cylindrical throats. There are certain mechnistic rules which determine when a particular pore or a throat will be invaded by oil/water/gas.

I want to look at a snapshot of the spatial distribution of oil/gas/water in the 3D network. This would require me to plot the spheres (which are of different sizes) and connect them with throats (which again are of diffrent radii) in a 3D space. Thereafter, depending upon the occupancy of a throat/pore by oil/water or gas I require it to be colored by different colors.

I have been using IDL so far but most of it has been through the use of IDL defined functions and some simple programs of my own. I knwo that this particular application will require some intensive programming with use of programming constructs provided by IDL. I would appreciate some insight from the experts about how best to approach this problem. Also if somebody has done
something similar I would appreciate their ideas.

Please send a copy of your replies to mohit@uh.edu as well.

Thanks a lot!

--
Mohit Singh

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haveyoueverwonderedhowdifficultlifewouldbewithoutthespacebar ?

Subject: Re: Looking for some advise
Posted by Pavel Romashkin on Tue, 05 Oct 1999 07:00:00 GMT
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This sounds to me like more than I would like to attempt in IDL. If all you want to do is to see pores fill up, an animation package would do better. However, if you back up one step from the picture, then you can try to see it all and quantify the entire model. What if, instead of attempting to numerically describe a multitude of pores within the medium and map them numerically
(a nightmare by itself in my opinion) with throats in 3D space, you re-calculate the database in terms of the distribution of permeabilities in 3D space. Permeability would be a function of pore density, throat diameter and length for every given part of the 3D volume. If you demand any accuracy, you will have to calculate that for oil, gas and water. After you have 3D arrays of permeabilities, you can proceed with visualizing by "injecting" water and watching how oil and gas

behave. Then, you can take snapshots and reproduce the modeling experiment as many times as you
want.
I am sure the above does not quite answer the question, but with my geological background I see a
lot more sense in modeling and visualizing the development and directions of flows, stagnant zones
and transport in a collector than in animating a theoretical porous media, unless, of course, you are preparing a presentaion for K-12 students.
Good luck,
Pavel

Mohit Singh wrote:

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