Subject: Re: Rotate 3D matrix
Posted by David Fanning on Fri, 26 Oct 2001 12:33:30 GMT
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Kay (bente@uni-wuppertal.de) writes:

> have again an annoying problem.
> Why does the Rot/Rotate functions work only on 2D-Array.
> I want to rotate a 3D-Array around the z-Axis (3D-Tomographic data).
> There must be a faster way than to use a FOR Loop to rotate each
> slice!!

There was a whole series of articles on this topic
a couple of weeks ago. Search Google for "Rotate Volume".

Cheers,

David

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Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Rotate 3D matrix
Posted by bente on Mon, 29 Oct 2001 11:13:07 GMT
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Hi,

I guess you think about the one using the FOR loops and the one with
the t3d?
The one with the for loop is too slow and the other says "not enough
memory to create arrays".

The problem is, that i have to rotate a 256x256x128 floating point
array round about 150 times around the z-achsis (to simulate a forward
projection)

Subject: Re: Rotate 3D matrix
Posted by Martin Downing on Tue, 30 Oct 2001 11:36:39 GMT
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Kay,
I think you must have only
read the first messages, as we addressed and solved the memory problems,
in fact the later code ran at a resepectible rate and in a small memory
size. If all you want is
a specialised z axis rotation, then use Marc's method, if you want a general
transformation, then use transform_image3d

code is at
http://homepage.ntlworld.com/martin.downing/idl/transform_im age3d.pro

Eg for your 256x256x128 FLOAT block:
IDL> test_ti3d, [256,256,128],/stats, /deb, rot = [0,0,15], /interp
VOL FLOAT = Array[256, 256, 128]
buffer= 128
transform_image3d: done in 9.8950000 sec
rot Z...
ms_transform_image3d: done in 3.9050000 sec
Vol: n_el = 8388608 max = 180.837 min= 0.000000
max abs diff 127.932
median abs diff 5.34058e-005
n_elements gt 0.01 diff 29440.0 0.350952 %

- hope this clears your problem up

Martin
--

Martin Downing,
Clinical Research Physicist,
Grampian Orthopaedic RSA Research Centre,
Woodend Hospital, Aberdeen, AB15 6LS.
m.downing@abdn.ac.uk

"Kay" <bente@uni-wuppertal.de> wrote in message
news:e143e8bc.0110290313.9ce515c@posting.google.com...
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