Subject: Radon parameters
Posted by Tim[1] on Mon, 26 Jul 2004 17:28:59 GMT
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Dear all,

This sort of question has come along before, but I'm still not able to give the correct parameters to the RADON function.

The situation is as follows. I have 73 experimentally obtained projections of an object, each 193 by 193 pixels. This should give me 193 sinograms, each 193 by 73 pixels. For each sinogram, I wish to produce a backprojection, and I can do this using the obsolete RIEMANN command, but I'd like to do so with the RADON function eg,

```
IDL> bp = RADON(/backprojection, sinogram, THETA=theta, RHO=rho)
```

The 73 projections were taken over an angular range -70 degrees to +74 degrees, with 2 degree increments. I am thus setting 'theta' using,

```
IDL> theta=(2*FINDGEN(73) - 70) * !DTOR
```

But, what of rho? I think that this should be a vector of 73 elements, but I can't fathom the rationale behind how it should be formed. RADON reports that "ARRAY, RHO, or THETA dimensions are incompatible", and I'm pretty sure the RHO's to blame.

Any advice?

Thanks,

Tim

Subject: Re: Radon parameters
Posted by Timm Weitkamp on Sat, 31 Jul 2004 10:27:25 GMT
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Oh, I never compared the speed of the two. I should have done that when I changed from RIEMANN to RADON some time ago. I prefer RADON because (a) it is the currently supported routine and (b) because I found it had more functionality.

When benchmarking, of course you should make sure the speed difference between the two routines isn't just due to more elaborate interpolation by one of them. Did you check that?

Timm

On 28.07.04 at 10:40 +0100, Tim Yates wrote:

> Dear Timm,
>
> Thanks for the info. Transposing the sinogram fixed the problem.
>
> One may use RADON or RIEMANN for backprojection, but which do you find that
> there are particular advantages in using one over the other? It strikes me,
> for one thing, that my routine with RIEMANN runs faster than the equivalent
> with RADON.
>
> Best,
> Tim

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