Subject: RADON/RIENMANN TRANSFORMATION
Posted by 555777555 on Mon, 14 Jun 2004 20:14:09 GMT
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I have data aquired over 360 degrees
Want to do backprojection with Radon/reinmann transformation
Seemingly Radon / Rienmann transformations inherently work over 180 degrees
How do i impliment the above without having to discard the data aquired at
> 180 degrees
Thanks , any suggestions / references welcome
Max

Subject: Re: RADON/RIENMANN TRANSFORMATION
Posted by lovedale27 on Tue, 15 Jun 2004 19:00:16 GMT
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Radon transform over 180 is enough. 360 degrees is redundant.

Subject: Re: RADON/RIENMANN TRANSFORMATION
Posted by peter.julyan on Wed, 16 Jun 2004 08:29:17 GMT
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lovedale27@hotmail.com (Karthikayan B.) wrote in message
news:<f4f859c4.0406151100.43672617@posting.google.com>...
> Radon transform over 180 is enough. 360 degrees is redundant.

If your data is noisy then the 180-360 certainly isn't redundant. You
just need to add it to the 0-180 data (reversed as approriate) to use
with RADON.

Pete.

Subject: Re: RADON/RIENMANN TRANSFORMATION
Posted by Timm Weitkamp on Wed, 16 Jun 2004 13:18:00 GMT
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Today at 01:29 -0700, Peter Julyan wrote:

> If your data is noisy then the 180-360 certainly isn't redundant. You
> just need to add it to the 0-180 data (reversed as approriate) to use
> with RADON.

Oh, I'd say it's a lot easier than that. The THETA keyword to RADON allows
you to specify the values of the angles in your sinogram, in radians. It

works nicely if you stick to the instructions (RADON is a bit picky about
whether parameters are given as named variables or not), and for any
angular range, not only 0-180 degrees.

Have fun
Timm

Subject: Re: RADON/RIENMANN TRANSFORMATION
Posted by 555777555 on Sat, 19 Jun 2004 14:47:29 GMT
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Thanks for everyones answers ans suggestions ,i appeciate it very much
1. Assuming the data is aquired in 128*128 matrix , over 360 degrees at 1
image per angle
(for simplicity)
 -> is it correct to say :
  -> the sinogram will be 128 images of 128*360 matrix
 - > From the discussion the Theta should be an array of 360 elements ,(one
element per angle)
-> For every Theta there should be an assosiated RHO , which means it should
also be an array of 360 elements.

I have tried using the above but IDL respond that the dimentions do not
agree
? What is the correct way / Where am i wrong
Max

"Timm Weitkamp" <dont.try@this.address> wrote in message
 news:Pine.LNX.4.44.0406161510030.30529-100000@localhost.loca ldomain...
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> whether parameters are given as named variables or not), and for any
> angular range, not only 0-180 degrees.
>
> Have fun
> Timm
>

Subject: Re: RADON/RIENMANN TRANSFORMATION
Posted by Timm Weitkamp on Mon, 21 Jun 2004 17:05:52 GMT
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Max:

> -> is it correct to say :
> -> the sinogram will be 128 images of 128*360 matrix

Yes.

> - > From the discussion the Theta should be an array of 360 elements
,(one
> element per angle)

Yes. If the angles are equidistant with 1 degree spacing, then you might
set

```
IDL> theta = FINDGEN(360) * !DTOR
```

> -> For every Theta there should be an assosiated RHO , which means it
should
> also be an array of 360 elements.

No! RHO is the spatial coordinate and is therefore, in your case, a vector
of 128 elements. For example:

```
IDL> rho = FINDGEN(128) - (127 / 2.0)
```

For the backprojection, you can then call RADON with the previously
defined variables "theta" and "rho" and the sinogram data. For example:

```
IDL> rec = RADON(/BACKPROJECT, sinogram $
          , THETA=theta, RHO=rho, NX=128, NY=128).
```

(where "sinogram" should be the array containing your sinogram [which
you will probably have to filter before]).

Good luck
Timm

On 19.06.04 at 16:47, 555777555 wrote:

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> ? What is the correct way / Where am i wrong
> Max

--
Timm Weitkamp <http://people.web.psi.ch/weitkamp>
