Subject: Re: 2D interpolation with sparse data
Posted by cmancone on Wed, 23 May 2007 12:39:54 GMT
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On May 22, 10:38 am, Ken G <kagoldb...@gmail.com> wrote:
> Here's an interesting interpolation problem.
>
> Suppose I have a coarsely sampled 2D dataset--an image. There are
> several ways to fill-in the missing data, including TRIGRID and
> TRI_SURF, etc. What I find though, is that these methods can introduce
> severe artifacts due to the nature of the triangulation.
>
> This example figure here shows the problem clearly:
> http://goldberg.lbl.gov/newsgroup/interpolation_problem.jpg[28k]
>
> My original image has simple, horizontal bands with no vertical
> features. My sparse sampling is collected at striped angles, as you
> can see. I realize that these interpolations aren't 'wrong' per se:
> the way in which they are triangulated strongly affects the final
> result.
>
> Short of re-writing my own triangulation routine, I am wondering if
> there is already a way that I can tell TRIANGULATE to prefer
> triangulation along the x-direction, for example, which in this case
> would solve the problem. Or if there is another built-in routine that
> might work better for me?
>
> I have tried using various Fourier filtering ideas that didn't work
> out as well as I had hoped. I also tried rotating my data-set in
> various ways, triangulating, and then rotating back. So far, those
> ideas haven't worked either.
>
> Any ideas?
>
> Thanks,
> Ken G

Maybe this is just me, but I'd just write an interpolation routine.
All you need is simle linear interpolation along one direction, which
is a simple enough problem to solve.