Subject: Re: polar interpolation
Posted by Stein Vidar Hagfors H[2] on Mon, 13 Jan 2003 17:12:56 GMT
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James Kuyper <kuyper@saicmodis.com> writes:

> Thomas Gutzler wrote:
>>
>> Good morning,
>>
>> I am looking for a function that can do a polar interpolation of a
>> [2,n]-array.
>> What I don't want is to convert polar koordinates to rect, interpolate,
>> and reconvert them to polar.
>
> If you have data that comes close to the pole, that's precisely what you
> should do. Otherwise, you're going to see some very bizarre results in
> that vicinity. The pole is a singular point in that coordinate system,
> and you can only approach it by using a coordinate system where it isn't
> a singular point.
>
> If you don't come close to the pole, you should be able to use ordinary
> interpolation routines, treating rho, theta as if they were x and y.
> That won't produce exactly the right results, but anything that produces
> exactly the right results is going to be mathematically equivalent to
> converting back to rectangular coordinates.

Wouldn't it be better to do the interpolation close to the pole in a
rotated (i.e. translated) polar coordinate system? Tilt the polar axis
by 90 degrees, interpolate, tilt back?

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