Subject: Re: evenly spaced vector
Posted by Craig Markwardt on Thu, 06 Sep 2012 19:41:22 GMT
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On Thursday, September 6, 2012 1:23:51 PM UTC-4, sivan wrote:
> On Thursday, September 6, 2012 5:00:29 PM UTC+3, Craig Markwardt wrote:
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>> On Thursday, September 6, 2012 7:22:21 AM UTC-4, sivan wrote:
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>>> On Sunday, September 2, 2012 11:46:56 PM UTC+3, Craig Markwardt wrote:
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>>> i appreciated for your reply.
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>>> it doesn't matter whether I use arcsample or not.
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>>> the problem is that i don't place evenly spaced points along the curve.
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>>> modified or unmodified arcsample routine doesn't work as requested. i tried both.
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>> I tried this example:
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>> x0 = randomn(seed,5) & y0 = randomn(seed,5)
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>
>> arcsample, x0, y0, x, y
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>
>> plot, x0, y0 & oplot, x, y, psym=1
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>
>> plot, sqrt((x(1:*)-x)^2 + (y(1:*)-y)^2)
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>> It looks evenly spaced to me.
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>> The points are evenly spaced along the (spline interpolation) path, but that does not

necessarily mean equally distant from each other (linear interpolation).
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>> ARCSAMPLE up-samples by a factor of 100. If you modify that to a larger and larger number, then neighbor points will tend to be more and more equidistant.
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>> CM
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> this is the graphic:
>
> https://docs.google.com/open?id=0B8iEehZBld1OLUVXdndEQ2RwcE0
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>
> as you can see, arcsample doesn't work properly. moreover, some points fall outside the curve.
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>
> this is the code and the data:
>
> https://docs.google.com/open?id=0B8iEehZBld1OaEI5UkJiTVFkelk
>
>
>
> inform me if links are broken.

The points are equally spaced in path length, where path length between data values is defined by the pythagorean theorem. It's doing what you asked it to do. But the pythagorean theorem doesn't really make sense when X is tempoerature and Y is log_g, does it?

If you want equidistantly sampled points in *plot* space, then you need to transform to device coordinates first, then do your arcsampling.

Some warnings. ARCSAMPLE uses SPL_INTERP(), which has some overshoot for rapidly varying functions like yours. You may not want that. Also, you used David's original code which

sets the endpoint slopes to AVGSLOPEX and AVGSLOPEY, but that assumes that it's still a closed curve. Yours is not a closed curve. For your open curves, you should revert to natural splines where the slope is not specified at the endpoints.

Craig