Subject: Problem with dist function in IDL
Posted by ATKT on Sun, 12 Aug 2007 14:41:05 GMT
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Can somebody tell what exactly dist function is doing in IDL
e.g x=dist(2,2)
   0.000000   1.00000
   1.00000   1.41421
What is the meaning of this ouput
x=dist(4,4)
   0.000000   1.00000   2.00000   1.00000
   1.00000   1.41421   2.23607   1.41421
   2.00000   2.23607   2.82843   2.23607
   1.00000   1.41421   2.23607   1.41421

I am unable to understand the out put which is being generated.

Subject: Re: Problem with dist function in IDL
Posted by Michael Galloy on Tue, 28 Aug 2007 20:10:11 GMT
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On Aug 28, 12:26 pm, David Fanning <n...@dfanning.com> wrote:
> I was just having a look at the BUTTERWORTH filter code in the IDL
> library, and I notice that the ITTVIS programmer who wrote this
> function uses the double FOR loop method to create the distance
> function, rather than DIST.
>
> What do you suppose he knows that we don't!?

Well, the BUTTERWORTH code has to handle 1, 2, or 3-dimensional
distance arrays, whereas DIST handles only the 2-dimensional case. So
BUTTERWORTH could use DIST for only one of the three cases, so the
developer decided not to use it? In any case, DIST is more efficient
than BUTTERWORTH for the 2-dimensional case.

Mike
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www.michaelgalloy.com

Subject: Re: Problem with dist function in IDL
Posted by Ken G on Wed, 06 Jan 2016 07:02:09 GMT
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As an interesting (9 years later) follow-up to this, I noticed that the IDL8.5 Butterworth.pro code
uses dist() in the calculation of 1D filters. The code pulls one one row from the 2D dist() result.

Totally inefficient. Go ahead and ask for filtering of an 1D array with 100k points and see what happens. :/

Plus they modified the routine significantly but that doesn't appear in the documentation / file header.