Subject: Re: find max in 3D array -- slow
Posted by Foldy Lajos on Sat, 10 Apr 2010 18:23:33 GMT
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On Sat, 10 Apr 2010, Timothy W. Hilton wrote:

> Hello IDL users,
>
> I have a 1200x1200x2900 array of floats. The dimensions correspond to
> latitude x longitude x time. I need to find the maxium at each
> location -- that is, I need the 1200x1200 array containing the max
> along the 3rd dimsion. IDL takes almost 3 minutes to do this on my
> system. This seemed slow. I compared it with Matlab, which took ten
> seconds. Is there a better way to search for the maxima using IDL?
>
> The demo code I used to compare IDL and Matlab is below (with output).
>
> I'm wondering if I ought to switch to Matlab. I just spent a couple
> of days writing IDL code to read my data, so I'd rather not.
>
> Many thanks,
> Tim
>
> --
>
> Timothy W. Hilton
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>
> ========
> scratch.pro:
>
> foo = randomu(0, 1200, 1200, 2920)
> PRINT, systime()
> foo_max = max(foo, DIMENSION = 3)
> PRINT, systime()
> END
>
> IDL> .run scratch
> % Compiled module: $MAIN$.
> Sat Apr 10 10:44:44 2010
> Sat Apr 10 10:47:36 2010
> IDL>
>
> ========
> scratch.m:

>
> foo = rand(1200,1200,2920);
> fprintf('%s\n', datestr(now()));
> foo_max = max(foo, [], 3);
> fprintf('%s\n', datestr(now()));
>
>>> scratch
> 10-Apr-2010 10:42:45
> 10-Apr-2010 10:42:55
>
>

I think that randomu(0, 1200,1200,2920) should be rand(2920, 1200, 1200)
in Matlab (an array of 2920 rows x 1200 columns x 1200 something). The
memory layout makes a big difference.

regards,
lajos
