Subject: Re: find max in 3D array -- slow
Posted by Maxwell Peck on Sun, 11 Apr 2010 21:41:58 GMT
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On Apr 11, 4:23 am, FÖLDY Lajos <fo...@rmki.kfki.hu> wrote:
> 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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>> 503 Walker Building, University Park, PA 16802
>> hil...@meteo.psu.edu
>
>> ========
>> 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

That's probably a good point, maybe storing the dataset in the equivalent of a Byte Interleaved by Pixel storage order would speed things up considerably.
