
Subject: Re: find max in 3D array -- slow

Posted by [Juggernaut](#) on Mon, 12 Apr 2010 16:20:36 GMT

[View Forum Message](#) <> [Reply to Message](#)

On Apr 10, 12:03 pm, "Timothy W. Hilton" <hil...@meteo.psu.edu> 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 maximum at each
> location -- that is, I need the 1200x1200 array containing the max
> along the 3rd dimension. 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
> PhD Candidate, Department of Meteorology
> The Pennsylvania State University
> 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
```

In my experience for large arrays it's best to simply do the following

```
foo = randomu(0, 1200, 1200, 2920)
maxArray = fltarr(1200,1200)
for i = 0, 2919 do maxArray = maxArray > foo[:,*,i]
```

Using IDLs routines is slooooow for this.
