Subject: Re: 2d min
Posted by rogass on Thu, 13 Jan 2011 13:57:35 GMT
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On 13 Jan., 14:11, Gray <grayliketheco...@gmail.com> wrote:
> On Jan 13, 7:26 am, Gray <grayliketheco...@gmail.com> wrote:
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>> On Jan 13, 2:18 am, chris <rog...@googlemail.com> wrote:
>
>>> On 12 Jan., 23:21, Gray <grayliketheco...@gmail.com> wrote:
>
>>>> Hi all,
>
>>>> I have a 3d array, NxNxM. What I would like is to find the minimum of
>>>> each NxN slice, and note the index of the minimum in the slice. I can
>>>> find my minimum by doing min(min(array,ind1,dim=1),dim=1,ind2), but
>>>> I'm not sure how to turn those two index arrays into the indices that
>>>> I need. Help...?
>
>>>> Thanks!
>
>>>> --Gray
>
>>> Hi,
>>> maybe I missed something, but why don't you use something like this:
>
>>> IDL> a=randomn(seed,10,10,5)
>>> IDL> min=min(a,dimension=3,ind)
>>> IDL> help,min,ind
>>> MIN FLOAT = Array[10, 10]
>>> IND LONG64 = Array[10, 10]
>>> IDL> ind2=array_indices(size(a,/dimensions),ind,/dimensions)
>>> IDL> help,ind2
>>> IND2 LONG64 = Array[3, 100]
>
>>> Is array_indices really to slow with the dimension keyword?
>
>>> Cheers
>
>>> CR

>
>> This gets me a NxN array of minima... I want a vector of minima of
>> length M (so the minimum in each plane).
>
> OK, for anyone else, here's what you have to do.
>
> IDL> a = randomu(seed,10,10,100)
> IDL> minima = min(min(a,ind1,dim=1),ind2,dim=2)
> IDL> ind1 -= rebin(indgen(1,100)*10^2.,10,100)
> IDL> ind2 -= (indgen(100)*10)
> IDL> xind = ind1[ind2,indgen(100)] mod 10
> IDL> yind = ind2
>
> You have to use ind2 to find the right elements of ind1. Since you
> get 1d indices from min, you need to subtract off N^2 or N to talk
> about each plane individually. The reason I wanted to vectorize is
> that my actual M is ~20k.

Ok, and this one?

```
t0=systime(1)
a=randomu(seed,100l,100l,10000l)
mins=min(reform(a,100l*100l,10000l,/over),ind,dimension=1)
a=reform(a,100l,100l,10000l,/over) ;if you need this...
help,ind,a &print,systime(1)-t0

IND             LONG64    = Array[10000]
A               FLOAT     = Array[100, 100, 10000]
      1.9180000
```

Maybe you can also use Thread Pool Keywords together with min.

Cheers
CR