## Subject: Re: Finding the mean of a set of images Posted by R.Bauer on Wed, 23 Oct 2002 16:54:55 GMT

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## David Oesch wrote:

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>
>
  Jaco van Gorkom wrote:
>> "Craig Markwardt" <craigmnet@cow.physics.wisc.edu> wrote in message
>> news:onznt6k38x.fsf@cow.physics.wisc.edu...
>>
>>> David Oesch <oesch@giub.unibe.ch> writes:
>>>
>>>> ...
>>> Does anyone have an algorithm for finding the mean/standardeviation etc
>>>> at each pixel position for a set of equal size 2-D images? Currently the
>>> only way I have to do this is to extract all the values for a given
>>> pixel position into a 1-D array and find the mean/standardeviation etc
>>> on that. Doing it pixel by pixel like this is inefficient in IDL so I am
>>>> looking for an *array* based algorithm that would find all
>>>> the mean/standardeviation etc in parallel.
>>>>
>>> Sure, if you stack your image into a 3D image cube, then you would
>>> have something like IMAGE = FLTARR(NX, NY, NIMAGES)
>>>
>>> Then the mean image is:
>>>
     mean = total(image,3)/nimages
>>>
>>> The standard deviation is:
>>>
     meancube = rebin(reform(mean,nx,ny,1),nx,ny,nimages)
     std = sqrt(total((image - meancube)^2,3)/(nimages-1))
>>> Now, what you meant by "etc" can get a little hairier. If you want to
>>> do median you are probably in trouble, but min and max are easy too:
>>>
     minimage = image(*,*,0)
     maximage = minimage
>>> for i = 1, nimages-1 do begin
       minimage = minimage < image(*,*,i)
>>>
       maximage = maximage > image(*,*,i)
>>>
>>> endfor
>>>
>>
>> I believe that IDL 5.5 offers the luxury of
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- maximage = MAX(image, MIN=minimage, DIMENSION=3) >> >> As for median, well, there was a thread on "Finding the median of a set >> of images" back in '96. Should be valid still, I guess. Improvising with >> transpose(), reform(), median(image, Nimages) and rebin() should be fun, >> but not be very fast. >> Jaco >> >> >> > Well it works fine in 5.5, but this feature is not explained in the help > of the idl 5.5 WIN/PC edition ... in 5.5 > > the help is obviously still the help of 5.4...
- Yes

and there was a big threat already about this
Ben and Andrew have developed their cool\_help tool
which is a idl widget to search to the entire idl5.5 help.
http://groups.google.de/groups?hl=de&lr=&ie=UTF-8&am
p;threadm=pan.2002.07.22.18.34.47.124252.19863%40as.arizona.
edu&rnum=9&prev=/groups%3Fq%3Dhelp%2B%252B2002%2Bgro
up:comp.lang.idl-pvwave%26hl%3Dde%26lr%3D%26ie%3DUTF-8%26sel
m%3Dpan.2002.07.22.18.34.47.124252.19863%2540as.arizona.edu% 26rnum%3D9
www.tidewater.net/~pemaguid.

All changes are described in the whats\_new pdf file too.

Reimar

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a IDL library at ForschungsZentrum Juelich http://www.fz-juelich.de/icg/icg-i/idl\_icglib/idl\_lib\_intro. html