Subject: Re: Calculate the mean of many images
Posted by Wasit.Weather on Sun, 16 Nov 2008 20:52:48 GMT
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On Nov 16, 2:04 pm, Craig Markwardt <cbmarkwa...@gmail.com> wrote:
> On Nov 16, 1:30 pm, Bulrush <Wasit.Weat...@gmail.com> wrote:
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>
>> On Nov 16, 2:54 am, Craig Markwardt <cbmarkwa...@gmail.com> wrote:
>
>>> On Nov 16, 1:16 am, Bulrush <Wasit.Weat...@gmail.com> wrote:
>
>>>> Hello,
>>>> I know this topic has been posted several times. But I could not find
>>>> my answer from these posted.
>>>> My issue is: I have many images 2 bands in each, one image is QA image
>>>> and the other one is data.
>>>> I need to calculate the mean of good pixels. Let's say QA image tells
>>>> me the location of good pixels, e.g. 1 for good pixels, and other for
>>>> bad. There are also NaN values. So, if the pixels are "good" in 7
>>>> images out of ten, then
>>>> (pixel1+pixel2...+Pixel7) /7
>
>>> I would loop over input images, and keep track of the cumulative sum
>>> of the number of valid pixels (NPIX), and the cumulative sum of the
>>> pixel values (SUM). Something like the following. Since there are
>>> only a few images, there will be very little overhead in the FOR-loop.
>
>>> Craig
>
>>> npix = 0 & sum = 0
>>> for i = 0, n_images-1 do begin
>>> qa = ... the ith QA image ...
>>> img = ... the ith image ...
>>> mask = (qa EQ 1) AND (finite(img) EQ 1)
>
>>> ;; Sum valid pixels
>>> npix += mask
>>> wh = where(mask, ct)
>>> if ct GT 0 then sum(wh) += img(wh)
>>> endfor
>
>>> ;; Positions where there are good pixels
>>> qa_avg = (npix GT 0)
>>> wh = where(qa_avg EQ 1)
>
>>> ;; Compute average for valid pixels

>>> avg = sum*0
>>> avg(wh) = sum(wh) / npix(wh)
>
>> Thanks for all the comments. I think Craig's method would work for me.
>> the Actual QA image contains more than one value, such as 0.00 (good
>> pixel), 1.000 (between good and band), 2.000 (cloud), 3.000(snow),
>> etc.
>> What does finite(img) EQ 1 mean here? Can I write this statement as
>> the following?
>
>> mask = (qa EQ 1.000 and qa EQ 0.000) AND (finite(img) EQ 1.000 &&
>> 0.000)
>
> As Chris points out, this is a logically inconsistent expression.
> Probably you want,
>   (qa EQ 1 OR qa EQ 0)
> for the first part of your expression.
>
> I'm not sure what you are getting at from the second part of the
> expression. FINITE(img) is 0 if the pixel value is infinite or NaN, 1
> otherwise. Looks like your "&& 0.000" is superfluous.
>
> To answer your other question: the WHERE occurs a few lines later.
> I'm using a MASK since you need to accumulate the number of pixels as
> well as the pixel values.

Thank you. I just run the code, but it always reporting syntax error
for sum(wh) += img(wh), for the brackets.
