
Subject: Re: Finding the mean of a set of images
Posted by [David Oesch](#) on Wed, 23 Oct 2002 14:28:10 GMT
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<html>
<head>
</head>
<body>
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Jaco van Gorkom wrote:


```
<blockquote type="cite" cite="mid:ap3uhr$erme$1@zam602.zam.kfa-juelich.de">
```

```
  <pre wrap="">"Craig Markwardt" <a class="moz-txt-link-rfc2396E"
```

```
href="mailto:craigmnet@cow.physics.wisc.edu">&lt;craigmnet@cow.physics.wisc.edu&gt;</a>
```

```
wrote in message<br><a class="moz-txt-link-freetext"
```

```
href="news:onznt6k38x.fsf@cow.physics.wisc.edu">news:onznt6k38x.fsf@cow.physics.wisc.edu
```

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</a>...<br></pre>
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  <blockquote type="cite">
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```
    <pre wrap="">David Oesch <a class="moz-txt-link-rfc2396E"
```

```
href="mailto:oesch@giub.unibe.ch">&lt;oesch@giub.unibe.ch&gt;</a> writes:<br></pre>
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  <blockquote type="cite">
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    <pre wrap=""> ...<br>Does anyone have an algorithm for finding the mean/standarde deviation
etc<br>at each pixel position for a set of equal size 2-D images? Currently the<br>only way I have
to do this is to extract all the values for a given<br>pixel position into a 1-D array and find the
mean/standarde deviation etc<br>on that. Doing it pixel by pixel like this is inefficient in IDL so I
am<br>looking for an *array* based algorithm that would find all<br>the mean/standarde deviation
etc in parallel.  ...<br></pre>
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  </blockquote>
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    <pre wrap="">Sure, if you stack your image into a 3D image cube, then you would<br>have
something like IMAGE = FLTARR(NX, NY, NIMAGES)<br><br>Then the mean image is:<br><br>
mean = total(image,3)/nimages<br><br>The standard deviation is:<br><br>
meancube =
rebin(reform(mean,nx,ny,1),nx,ny,nimages)<br> std = sqrt(total((image -
meancube)^2,3)/(nimages-1))<br><br>Now, what you meant by "etc" can get a little hairier. If you
want to<br>do median you are probably in trouble, but min and max are easy too:<br><br>
minimage = image(*,*,0)<br> maximage = minimage<br> for i = 1, nimages-1 do begin<br>
minimage = minimage &lt; image(*,*,i)<br>    maximage = maximage &gt; image(*,*,i)<br>
endfor<br></pre>
```

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  </blockquote>
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    <pre wrap=""><!--><br>I believe that IDL 5.5 offers the luxury of<br> maximage =
MAX(image, MIN=minimage, DIMENSION=3)<br><br>As for median, well, there was a thread on
"Finding the median of a set<br>of images" back in '96. Should be valid still, I guess. Improvising
with<br>transpose(), reform(), median(image, Nimages) and rebin() should be fun, but<br>not be
very fast.<br><br> Jaco<br><br><br></pre>
```

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  </blockquote>
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    <pre class="moz-signature" cols="$mailwrapcol">Well it works fine in 5.5 , but this feature is
not explained in the help of the  idl 5.5 WIN/PC edition
```

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      ... in 5.5 the help is obviously&nbsp;still the help of 5.4...
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</body>
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