Subject: Re: RMS error
Posted by Rick Towler on Tue, 11 May 2004 22:34:43 GMT
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"David Fanning" wrote ...
> Julio writes:
>
>> I'd like to calculate Root Mean Square error using a base image and a
>> secondary image. How can I do that? Clues are welcome!
>
> rms_error = Sqrt(Total((img_1 - img2)^2)/N_Elements(img_1))

A couple of questions:

1) Shouldn't you first cast img_1 and img_2 to something other than byte? Subtracting byte arrays will result in points that wrap:

```
IDL> print, 213B-215B
 254
```

When you really want:

```
IDL> print, 213s-215s
      -2
```

2) Is this correct for true color images? Do you total the square of the differences for each color plane or do you total the square of the sum of the differences for each plane? That is:

```
IDL> print, TOTAL((img_1 - img_2)^2)
      56825.0
```

or:

```
IDL> dr=reform(img_1[0,*,*] - img_2[0,*,*])
IDL> dg=reform(img_1[1,*,*] - img_2[1,*,*])
IDL> db=reform(img_1[2,*,*] - img_2[2,*,*])

IDL> print, total((dR + dG + dB)^2)
      170325.
```

Now that I think about it the first approach looks correct but since I am not an image analyst and I don't have even the most basic of references I thought I would ask.

-Rick