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Subject: Calculating colocalization of three colours  
Posted by [cgguido](#) on Thu, 04 Jun 2009 16:42:58 GMT  
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Hi all,

say I have two images, r(ed) and g(reen), and I want to know how colocalized these colours are. I do  $c1 = \text{correlate}(r, g)$ . if  $c$  is close to 1 then there is a lot of colocalization, if  $c \sim 0$  then there is none, if  $c \sim -1$  then some joker just gave me the same image twice, inverting one of the copies! (usually, one calculates  $c$  on a ROI...)

I am trying to figure out how to do something similar when a b(lue) image is added to the mix. I could do them pairwise, but that means for each set, I would end up with three numbers...

Any ideas?

Many thanks,  
Gianguido

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Subject: Re: Calculating colocalization of three colours  
Posted by [cgguido](#) on Tue, 09 Jun 2009 15:37:29 GMT  
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bump, aka:

I guess this is more of an image analysis than an IDL question. Still, any ideas?

Thanks,  
Gianguido

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Subject: Re: Calculating colocalization of three colours  
Posted by [pgrigis](#) on Wed, 10 Jun 2009 15:29:53 GMT  
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On Jun 4, 12:42 pm, Gianguido Cianci <[gianguido.cia...@gmail.com](mailto:gianguido.cia...@gmail.com)> wrote:

> Hi all,

>

> say I have two images, r(ed) and g(reen), and I want to know how  
> colocalized these colours are. I do  $c1 = \text{correlate}(r, g)$ . if  $c$  is close  
> to 1 then there is a lot of colocalization, if  $c \sim 0$  then there is none,  
> if  $c \sim -1$  then some joker just gave me the same image twice, inverting

> one of the copies! (usually, one calculates c on a ROI...)  
>  
> I am trying to figure out how to do something similar when a b(lue)  
> image is added to the mix. I could do them pairwise, but that means  
> for each set, I would end up with three numbers...  
>  
> Any ideas?  
>  
> Many thanks,  
> Gianguido

Well, considering that you have 3 possibilities:

- all 3 correlated
- 2 correlated, one not
- none are correlated

I don't think anything less than 3 numbers would be enough anyway...

Ciao,  
Paolo

Ciao,  
Paolo

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Subject: Re: Calculating colocalization of three colours  
Posted by [cgguido](#) on Wed, 10 Jun 2009 19:42:26 GMT  
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Grazie for the reply Paolo... ;-)

I guess if you consider a triangle with side lengths  $C_{ab}$ ,  $C_{ac}$ , and  $C_{bc}$ , where these are the correlation coefficients, you can describe the triangle with only two numbers if you put one apex at the origin and one side along an axis... hmmm.

Anyway thanks again,  
Gianguido

On Jun 10, 10:29 am, Paolo <pgri...@gmail.com> wrote:  
> On Jun 4, 12:42 pm, Gianguido Cianci <gianguido.cia...@gmail.com>  
> wrote:

>  
>  
>  
>> Hi all,  
>  
>> say I have two images, r(ed) and g(reen), and I want to know how  
>> colocalized these colours are. I do `c1=correlate(r,g)`. if `c` is close  
>> to 1 then there is a lot of colocalization, if `c~0` then there is none,  
>> if `c~-1` then some joker just gave me the same image twice, inverting  
>> one of the copies! (usually, one calculates `c` on a ROI...)  
>  
>> I am trying to figure out how to do something similar when a b(lue)  
>> image is added to the mix. I could do them pairwise, but that means  
>> for each set, I would end up with three numbers...  
>  
>> Any ideas?  
>  
>> Many thanks,  
>> Gianguido  
>  
> Well, considering that you have 3 possibilities:  
>  
> - all 3 correlated  
> - 2 correlated, one not  
> - none are correlated  
>  
> I don't think anything less than 3 numbers would be enough anyway...  
>  
> Ciao,  
> Paolo  
>  
> Ciao,  
> Paolo

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Subject: Re: Calculating colocalization of three colours  
Posted by [cgguido](#) on Wed, 10 Jun 2009 19:50:16 GMT  
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On Jun 10, 2:42 pm, gianguido.cia...@gmail.com wrote:

> Grazie for the reply Paolo... ;-)  
>  
> I guess if you consider a triangle with side lengths `C_ab`, `C_ac`, and  
> `C_bc`, where these are the correlation coefficients, you can describe  
> the triangle with only two numbers if you put one apex at the origin  
> and one side along an axis... hmmm.  
>  
> Anyway thanks again,

> Gianguido

No no, still need 3 numbers! doh!

G

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