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Subject: Re: 2D Pearson correlation coefficient  
Posted by [robinson.inj](#) on Fri, 31 Jan 2014 11:09:19 GMT  
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[http://www.idlcoyote.com/code\\_tips/eof\\_analysis.html](http://www.idlcoyote.com/code_tips/eof_analysis.html)

<http://stackoverflow.com/questions/10633773/how-to-do-area-weighted-regridding-of-regular-lat-lon-data-using-python>

On Thursday, January 30, 2014 9:43:54 AM UTC-5, Lim wrote:

> Dear all,  
>  
> I would like to ask if someone know a code to calculate a 2D Pearson correlation as:  
>  
>  
>  
> 
$$r^2 = \frac{(\sum w_i (M_i - M)(O_i - O))^2}{(\sum w_i (M_i - M)^2)(\sum w_i (O_i - O)^2)}$$
  
>  
>  
>  
> Sum runs from  $i=1$  to  $N$ .  $N$  is the total number of grid cells.  
>  
>  $M_i$  and  $O_i$  are the values in the grid cell  $i$  and  $w_i$  is a normalized weight (area) of grid cell  $i$ .  $\sum w_i = 1$  (Sum from  $i=1$  to  $N$ ).  
>  
>  
>  
> IDL has `C_Correlate` and `R_correlate` but none of them include the  $w_i$  factor.  
>  
>  
>  
> I will appreciate any assistance.  
>  
>  
>  
> Lim

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