Subject: Re: normalisation of PCA bands
Posted by lecacheux.alain on Fri, 14 Oct 2011 11:51:34 GMT
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On 14 oct, 09:59, eva.ivits-was...@ext.jrc.ec.europa.eu wrote:
> On Oct 13, 6:14 pm, alx <lecacheux.al...@wanadoo.fr> wrote:
>
>> On 13 oct, 09:58, eva.ivits-was...@ext.jrc.ec.europa.eu wrote:
>
>>> Good morning!
>
>>> How can I normalisePCAbands so that they have values between -1 and
>>> 1? Is it a simple min-max scaling or is there a more sophisticated,
>>> correct way to do it?
>
>>> Thanks in advance,
>>> Eva
>
>> You may use the STANDARDIZE function which normalizes the variance and
>> subtracts the average of each band.
>> alx.
>
> Hi Alex,
>
> Thanks but I'm afraid it isn't that I'm looking for.
>
> In meteorological publications I've read the following statement:
> "the spatial patterns (eigenvectors) properly normalized (divided by
> their Euclidean norm and multiplied by the square root of the
> corresponding eigenvalues) are called loadings; they represent the
> correlation between the original data (the time series) and the
> corresponding principal component time series."
>
> Doing this the PCA bands will have values between -1 and 1.
> Unfortunately I do not really understand the meaning of the above
> sentence...
>
> Any idea?
>
> Thanks,
>
> Eva

Hi Eva,

> Doing this the PCA bands will have values between -1 and 1.
Why ?
I am afraid to do not have fully understood what you (or the

meteorologists) mean by "PCA bands". In general, and regarding the data you process by using the PCA method, normalizing standard deviations of your observed variables is more or less equivalent to normalize the eigenvalues of their covariance matrix and then to "equilibrate" the relative importance of each variable.
Sorry to do not be a meteorologist...
alain.
