Subject: Re: Principal component analysis Posted by Haje Korth on Wed, 05 Dec 2007 17:02:28 GMT

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THanks, I guess I was expecting the whole package for a routine with that name. And the help was not helping either. :-)

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"Vince Hradil" <hradilv@yahoo.com> wrote in message
news:d447b810-a195-4e34-8dd6-a353ba4a3ac9@b40g2000prf.google groups.com...
> On Dec 5, 10:47 am, "Haje Korth" <haje.ko...@nospam.jhuapl.edu> wrote:
>> Yup, that'll do it. I am still not sure I understand the logic behind
>> this.
>> I though the correlation is part of the PCA.
>>
   "Vince Hradil" <hrad...@yahoo.com> wrote in message
>>
   news:8362380a-217a-45d2-b7c4-0198e5931b39@y5g2000hsf.googleg roups.com...
>>
>>> On Dec 5, 10:08 am, "Haje Korth" <haje.ko...@nospam.jhuapl.edu> wrote:
>>>> I have tried that, it gives
>>>> IDL> ev=imsl princ comp(correlate(a,/cov)) & print,ev
         45.2906
                    3.70938-2.65683e-006
>>>>
>>
>>>> These EVs are the same as you get using PCOMP with /COV keyword.
>>
>>> "Vince Hradil" <hrad...@yahoo.com> wrote in message
>>> news:54fc6ed8-ccd7-4ac6-8e0d-09f5d190eeac@o6g2000hsd.googleg roups.com...
>>
>>> > On Dec 5, 9:12 am, Vince Hradil <hrad...@yahoo.com> wrote:
>>> > On Dec 5, 8:00 am, "Haje Korth" <haje.ko...@nospam.jhuapl.edu>
>>> >> wrote:
>>
>>>> >> Hi,
>>> >> I am puzzled by principal component analysis. I calculated the
>>>> >> eigenvalues
>>> >> using both PCOMP and IMSP PRINC COMP routines. Could someone
>>>> >> enlighten
>>>> >> me
>>> >> why the results are completely different? I have tried different
>>> >> keywords to
>>> >> see whether I can match them by trial and error, but I had no
>>>> >> Success.
>>>> >> There
>>> >> must be someone out there who undertstands this much better than
>>>> >> |
>>>> >> do.
```

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>>
>>>> >> Thanks so much,
>>>> >> Haje
>>
>>> >> IDL> a=[[1,-2,-6],[-2,1,-3],[-6,-3,5]]
>>> >> IDL> pca=pcomp(a,eigenvalues=ev) & print,transpose(ev)
>>>> >>>
              2.24227
                        0.757732
                                    0.000000
>>> >> IDL> ev=imsl_princ_comp(a) & print,ev
              9.53359
                        -5.19751
                                    2.66392
>>>> >>>
>>
>>>> >> From the HELP:
>>>> >> Syntax
>>> > Result = IMSL_PRINC_COMP(covariances [, /COV_MATRIX]
>>> > [, /CORR_MATRIX] [, CORRELATIONS=variable] [, CUM_PERCENT=variable]
>>>> [,
>>> >> DF=variable] [, /DOUBLE] [, EIGENVECTORS=variable] [,
>>> >> STDEV=variable])
>>
>>> >> Note that IMSL_PRINC_COMP requires that you pass the covariance or
>>> >> correlation matrix - not the vectors.
>>
>>>> > so maybe try
>>>> > ev=imsl_princ_comp(correlate(a,/covariance) & print, ev
>>> > (I don't have an analyst license)
>>
>>> There you go 8^)
>>> How about
>>> ev=imsl princ comp(correlate(a)) & print, ev
>
> Oh, yes correlation IS part of PCA, it's just that IMSL decided to let
> the user do that part him/herself. IMSL_PRINC_COMP calculates the
> principal components of the cov/cor matrix. Calculating these
> principal components is just part of "Principle Components Analysis".
> IMSL leaves it up to the user to decide how to implement the principal
> components in his/her analysis.
```