

変数の並べ方によって、分散共分散行列の Cholesky 分解が異なる例

( 計算は scilab-3.1.1/ Copyright (c) 1989-2005 Consortium Scilab (INRIA, ENPC)による )

(1) 分散の小さい順に並べた場合

```
--> a=[1, -0.84; -0.84, 1.96]
a =
```

```
! 1.    - 0.84 !
! - 0.84  1.96 !
```

```
--> av = inv(a)
av =
```

```
! 1.5625    0.6696429 !
! 0.6696429 0.7971939 !
```

```
--> [r] = chol(av)
r =
```

```
! 1.25    0.5357143 !
! 0.      0.7142857 !
```

```
--> chk1 = r*a*r'
chk1 =
```

```
! 1.          - 8.054D-18 !
! - 6.185D-17  1.          !
```

```
--> ph1= [0.6, 0.4; -0.2, 0.8]
ph1 =
```

```
! 0.6  0.4 !
! - 0.2 0.8 !
```

```
--> rv=inv(r)
rv =
```

```
! 0.8 - 0.6 !
! 0.   1.4 !
```

```
--> rvph=ph1*rv
rvph =
```

```
! 0.48  0.2 !
! - 0.16 1.24 !
```

```
--> chk3=r*rv
chk3 =
```

```
! 1. - 2.223D-17 !
! 0.  1.          !
```

(2) 分散の大きい順に並べた場合

```
--> b=[1.96, -0.84; -0.84, 1]
b =
```

```
! 1.96 - 0.84 !
! - 0.84  1.   !
```

```
--> bv = inv(b)
bv =
```

```
! 0.7971939  0.6696429 !
! 0.6696429  1.5625    !
```

```
--> [q] = chol(bv)
q =
```

```
! 0.8928571  0.75 !
! 0.          1.   !
```

```
--> chk2 = q*b*q'
chk2 =
```

```
! 1.          8.104D-17 !
! 8.104D-17  1.          !
```

```
--> ph2 = [0.8, -0.2; 0.4, 0.6]
ph2 =
```

```
! 0.8 - 0.2 !
! 0.4  0.6 !
```

```
--> qv = inv(q)
qv =
```

```
! 1.12 - 0.84 !
! 0.    1.    !
```

```
--> qvph = ph2*qv
qvph =
```

```
! 0.896 - 0.872 !
! 0.448  0.264 !
```

```
--> chk4=q*qv
chk4 =
```

```
! 1. - 1.811D-17 !
! 0.  1.          !
```