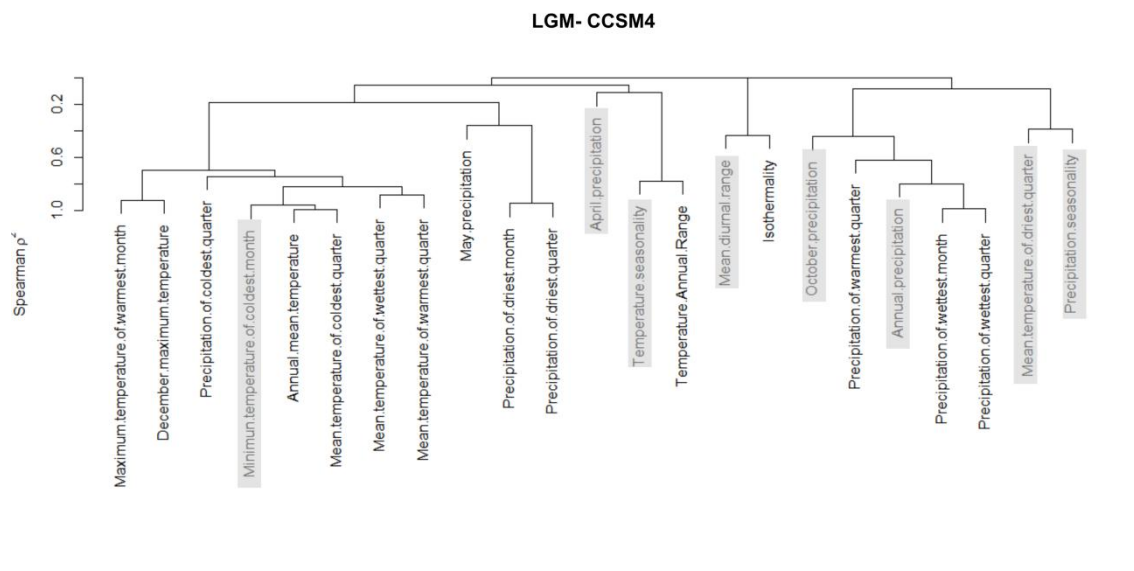


**Supplementary Data SD2.** Script and plots used to estimate highly correlated environmental variables.

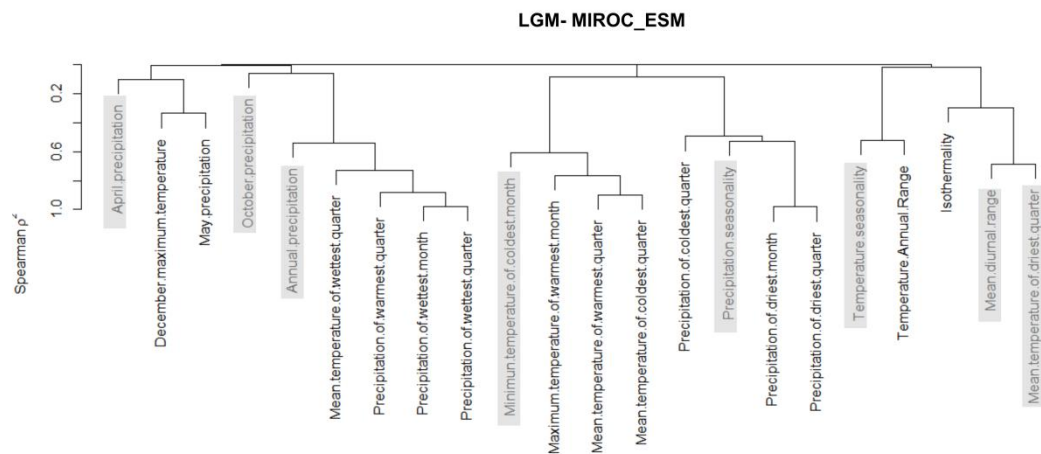
```
rm(list=ls())
options(digits=3)
setwd()
```

```
#Center and standardize
library(Hmisc)
```

```
#Historical scenarios LGM CCMS4
LGMCCSM <- read.csv("datasets/LGMccsm.csv")
View(LGMCCSM)
vc1 <- varclus(as.matrix(LGMCCSM[,c(1:23)]))
plot(vc1)
```



```
#Historical scenarios LGM MIROC ESM
LGMMIROC<- read.csv("datasets/LGMmiroc-esm.csv")
View(LGMMIROC)
vc2 <- varclus(as.matrix(LGMMIROC[,c(1:22)]))
plot(vc2)
```



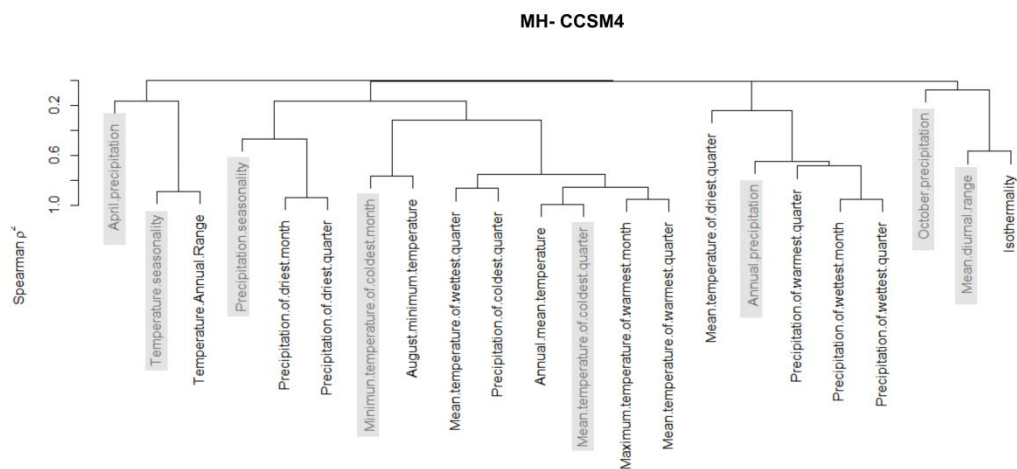
#Historical scenarios Mid Holocene CCMS4

MHCCSM <- read.csv("datasets/MHccsm.csv")

View(MHCCSM)

vc3 <- varclus(as.matrix(MHCCSM[,c(1:22)]))

plot(vc3)



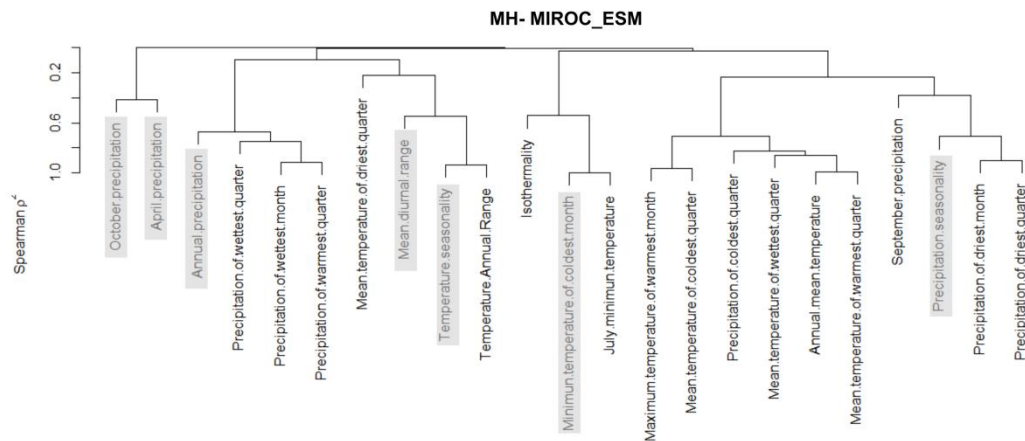
#Historical scenarios Mid Holocene MIROC ESM

MHMIROC <- read.csv("datasets/MHmiroc-esm.csv")

View(MHMIROC)

vc4 <- varclus(as.matrix(MHMIROC[,c(1:23)]))

plot(vc4)



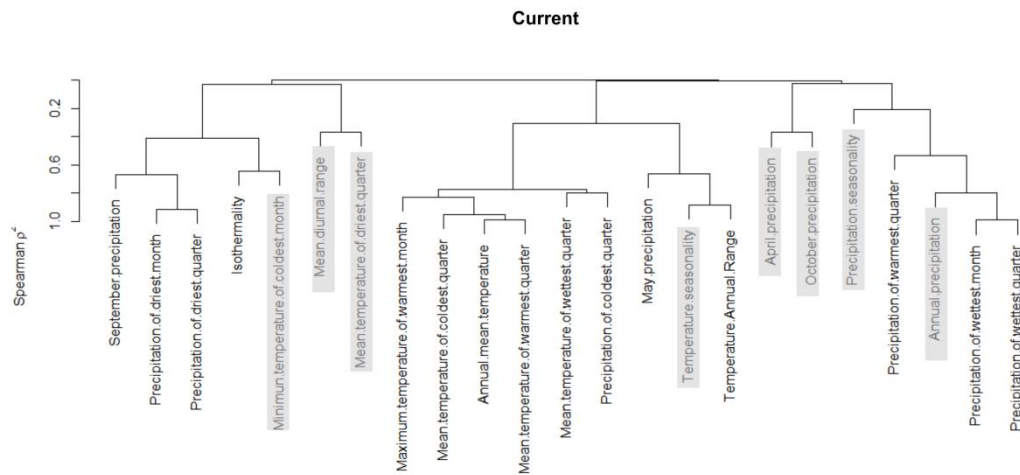
**#Current scenarios**

```
current <- read.csv("datasets/Current.csv")
```

```
View(current)
```

```
vc5 <- varclus(as.matrix(current[,c(17,20,32,35,42:60)]))
```

```
plot(vc5)
```



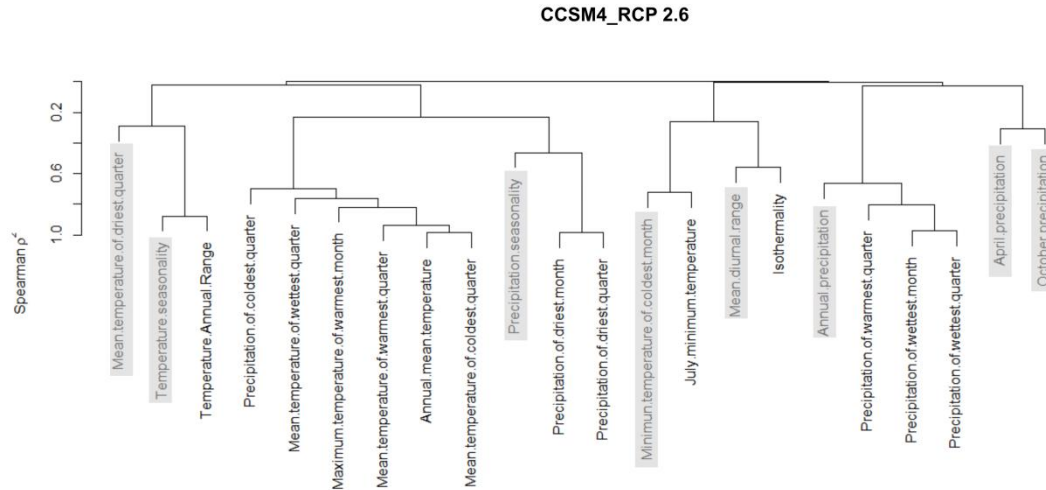
**#Future scenarios CCMS4 RCP 26 Year 2070**

```
RCP26CCSM70 <- read.csv("datasets/70ccsm26.csv")
```

```
View(RCP26CCSM70)
```

```
vc6 <- varclus(as.matrix(RCP26CCSM70[,c(2:23)]))
```

```
plot(vc6)
```



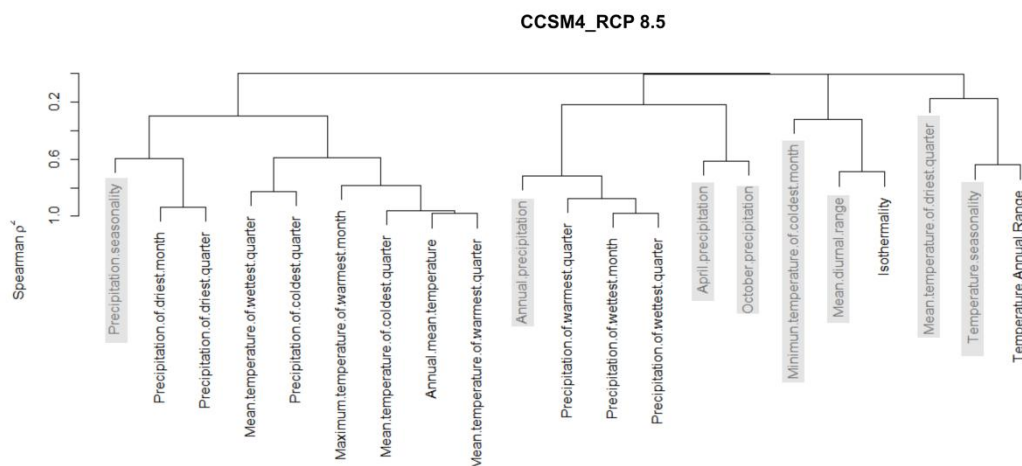
**#Future scenarios CCMS4 RCP 85**

RCP85CCSM70 <- [read.csv](#)("datasets/70ccsm85.csv")

[View](#)(RCP85CCSM70)

vc7 <- [varclus](#)(as.matrix(RCP85CCSM70[,c(1:19,23,29)]))

[plot](#)(vc7)



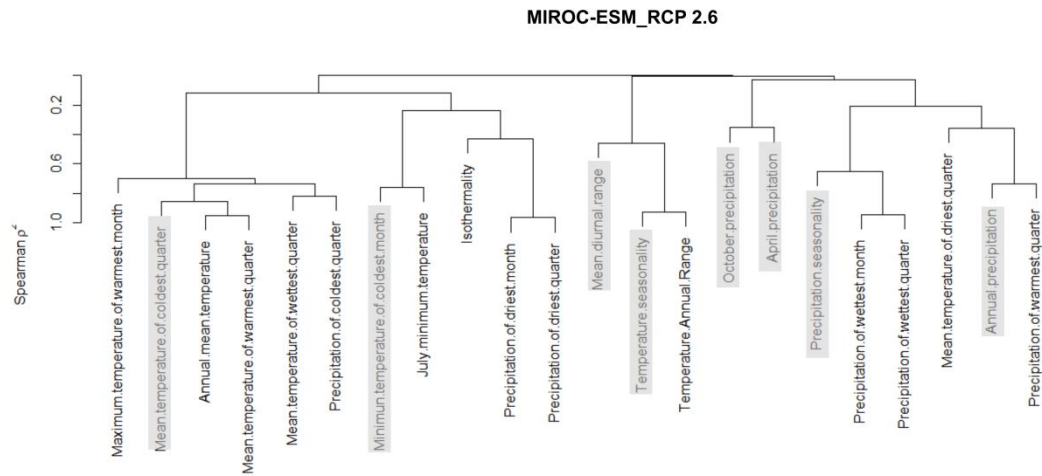
**#Future scenarios MIROC ESM RCP 26**

RCP26MIROC70 <- [read.csv](#)("datasets/70miroc-esm26.csv")

[View](#)(RCP26MIROC70)

vc8 <- [varclus](#)(as.matrix(RCP26MIROC70[,c(2:23)]))

[plot](#)(vc8)



#Future scenarios MIROC ESM RCP 85

RCP85MIROC70 <- read.csv("datasets/70miroc-esm85.csv")

View(RCP85MIROC70)

vc9 <- varclus(as.matrix(RCP85MIROC70[,c(1:19,23,29)]))

plot(vc9)

