

Assn 6: R code KEY

```
#####  
setwd("C:/Users/corter/Desktop/HUDM5124")  
# Assn 6 unfolding example  
winter <- read.table("winter olympics unfolding.txt", header=TRUE)  
winter  
dim(winter)
```

```
> dim(winter)  
[1] 24 13
```

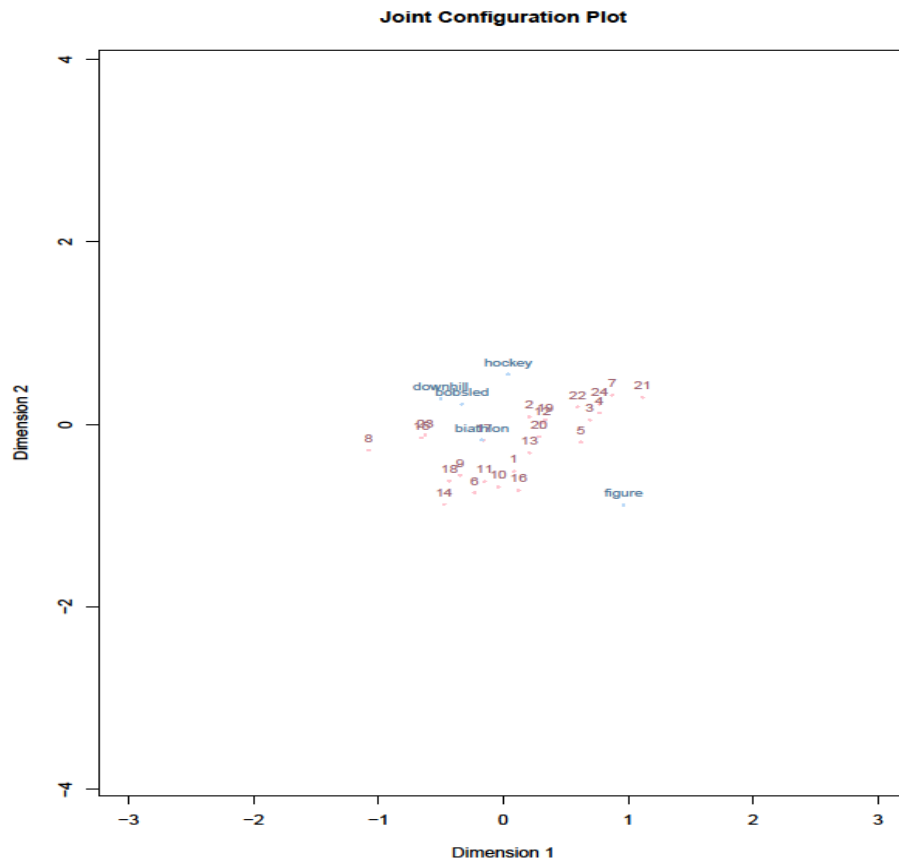
```
> wint_om <- smacofRect(winter[, 2:6], type="ordinal", conditionality="matrix")  
> wint_om
```

```
Call: smacofRect(delta = winter[, 2:6], type = "ordinal", conditionality = "matrix")
```

```
Model: Rectangular smacof  
Number of subjects: 24  
Number of objects: 5  
Transformation: ordinal p  
Conditionality: matrix
```

```
Stress-1 value: 0.055954  
Penalized Stress: 0.679258  
Number of iterations: 144
```

```
> plot(wint_om, xlim = c(-3, 3), asp = 1)
```



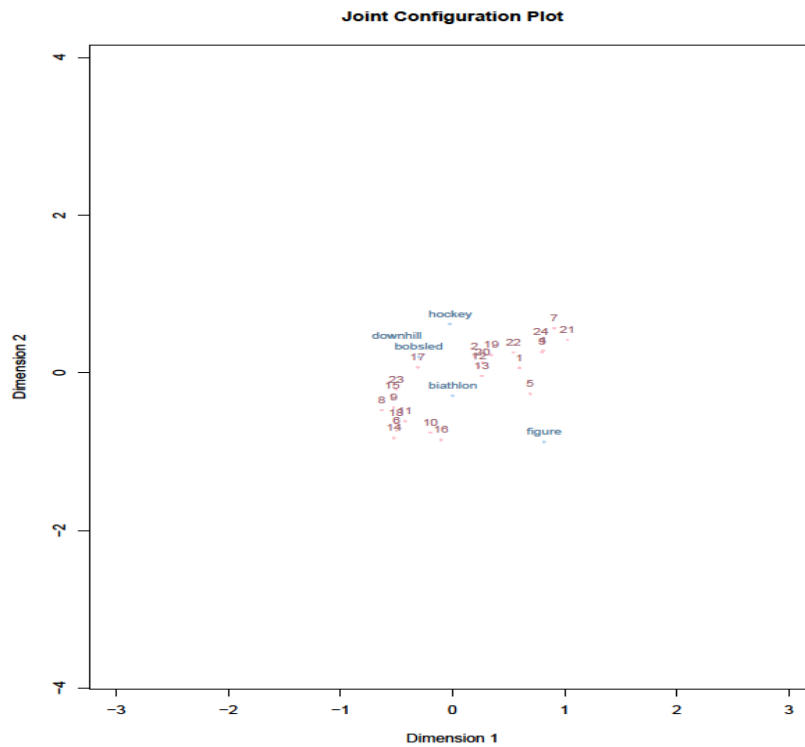
```
>
> wint_im <- smacofRect(winter[, 2:6], type="interval", conditionality="matrix")
> wint_im
```

Call: smacofRect(delta = winter[, 2:6], type = "interval", conditionality = "matrix")

```
Model: Rectangular smacof
Number of subjects: 24
Number of objects: 5
Transformation: interval
Conditionality: matrix
```

```
Stress-1 value: 0.131232
Penalized Stress: 0.000806
Number of iterations: 1183
```

```
> plot(wint_im, xlim = c(-3, 3), asp = 1)
```



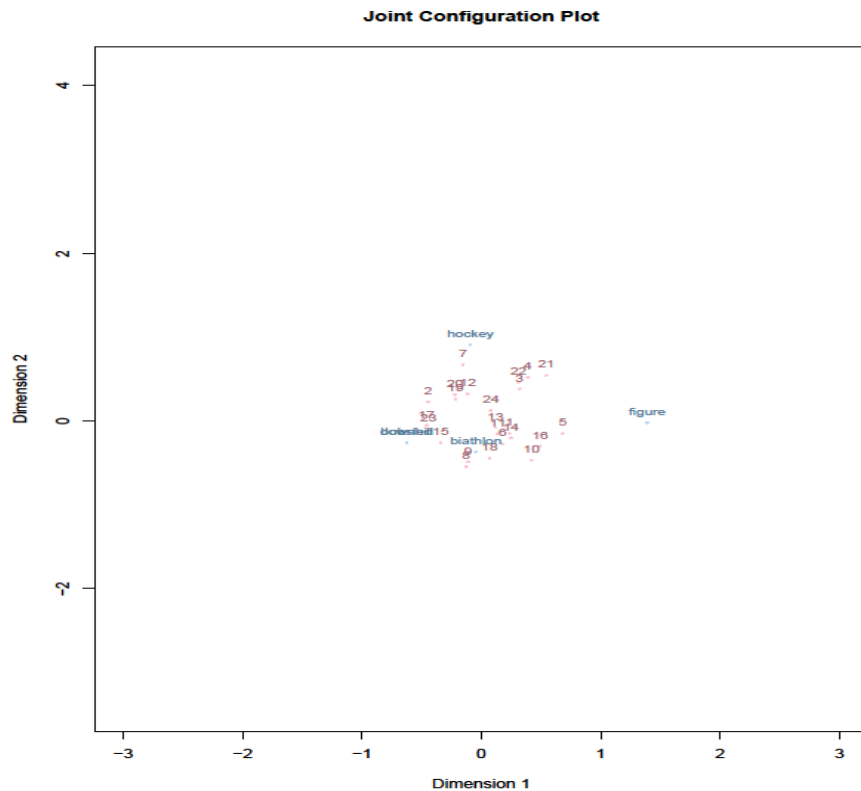
```
>
> wint_or <- smacofRect(winter[, 2:6], type="ordinal", conditional i ty="row")
> wint_or
```

Call: smacofRect(delta = winter[, 2:6], type = "ordinal", conditional i ty = "row")

```
Model : Rectangular smacof
Number of subjects: 24
Number of objects: 5
Transformation: ordinal p
Conditional i ty: row
```

```
Stress-1 value: 0
Penalized Stress: 1e-06
Number of iterations: 877
```

```
> plot(wint_or, xlim = c(-3, 3), asp = 1)
```



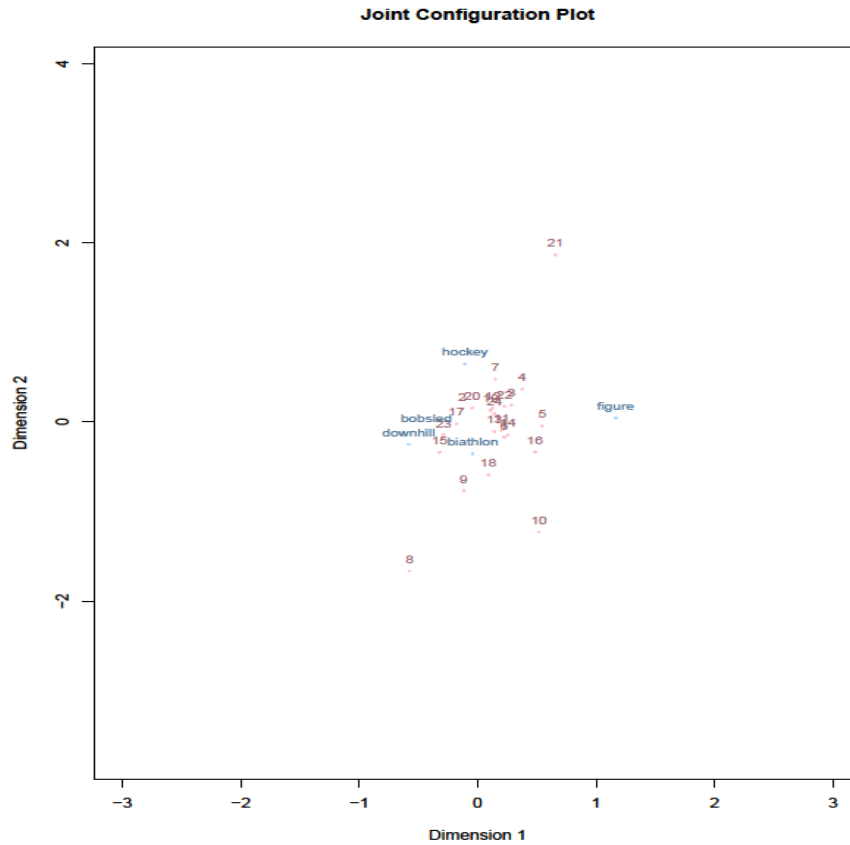
```
>
> wint_ir <- smacofRect(winter[, 2:6], type="interval", conditionality="row")
Warning message:
In smacofRect(winter[, 2:6], type = "interval", conditionality = "row") :
  Iteration limit reached! Increase itmax argument!
> wint_ir
```

```
Call: smacofRect(delta = winter[, 2:6], type = "interval", conditionality = "row")
```

```
Model: Rectangular smacof
Number of subjects: 24
Number of objects: 5
Transformation: interval
Conditionality: row
```

```
Stress-1 value: 0.068522
Penalized Stress: 0.190743
Number of iterations: 10000
```

```
> plot(wint_ir, xlim = c(-3, 3), asp = 1)
```



Part 3

```
> ##### Part 3 #####
> # I choose the row condition, ordinal analysis for further exploration
> wi nt_or1 <- smacofRect(wi nter[, 2: 6], type="ordi nal ", condi ti onal i ty="row", ndi
m=1)
Warning message:
In smacofRect(wi nter[, 2: 6], type = "ordi nal ", condi ti onal i ty = "row", :
Iteration limit reached! Increase itmax argument!
> wi nt_or2 <- smacofRect(wi nter[, 2: 6], type="ordi nal ", condi ti onal i ty="row", ndi
m=2)
> wi nt_or3 <- smacofRect(wi nter[, 2: 6], type="ordi nal ", condi ti onal i ty="row", ndi
m=3)
> wi nt_or4 <- smacofRect(wi nter[, 2: 6], type="ordi nal ", condi ti onal i ty="row", ndi
m=4)
Warning message:
In sqrt(1 - sum(w * dhat * d, na.rm = TRUE)^2/(sum(w * dhat^2, na.rm = TRUE)
* :
NaNs produced
> wi nt_or5 <- smacofRect(wi nter[, 2: 6], type="ordi nal ", condi ti onal i ty="row", ndi
m=5)
Warning message:
In sqrt(1 - sum(w * dhat * d, na.rm = TRUE)^2/(sum(w * dhat^2, na.rm = TRUE)
* :
NaNs produced
>
> # put the stress values for dim=1 to 5 into an array stressS
```

```
> stressS<-c(rep(0, 5))  
> stressS[1]<-wint_or1$stress  
> stressS[2]<-wint_or2$stress  
> stressS[3]<-wint_or3$stress  
> stressS[4]<-wint_or4$stress  
> stressS[5]<-wint_or5$stress  
> # plot stress for the five dimensionalities  
> plot(stressS, type="l")
```

