View zoning together with zone distribution

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Contents


```
library(geozoning)
library(sp)
library(fields)
```

This vignette shows how to use the zoning with corrections procedure. It first calls the correctionTree function, which generates a binary tree of corected zonings and then searches for the best corrected zoning. It plots the resulting zoning as well as the distribution of values within each zone.

Step 1

A map object is simulated with a Gaussian field and a variogram model. 450 points are randomly allocated on a square field of size 1.Then 1936 points are kriged on a regular grid using inverse distance weighted interpolation. A Delaunay tesselation yields point neighborhood in the sense of Voronoi.

```
seed=40
map=genMap(DataObj=NULL,seed=seed,disp=FALSE,krig=1,Vnugget=1.2)
```

```
## [1] "DataObj=NULL, generating DataObj-seed= 40"
## [using ordinary kriging]
```

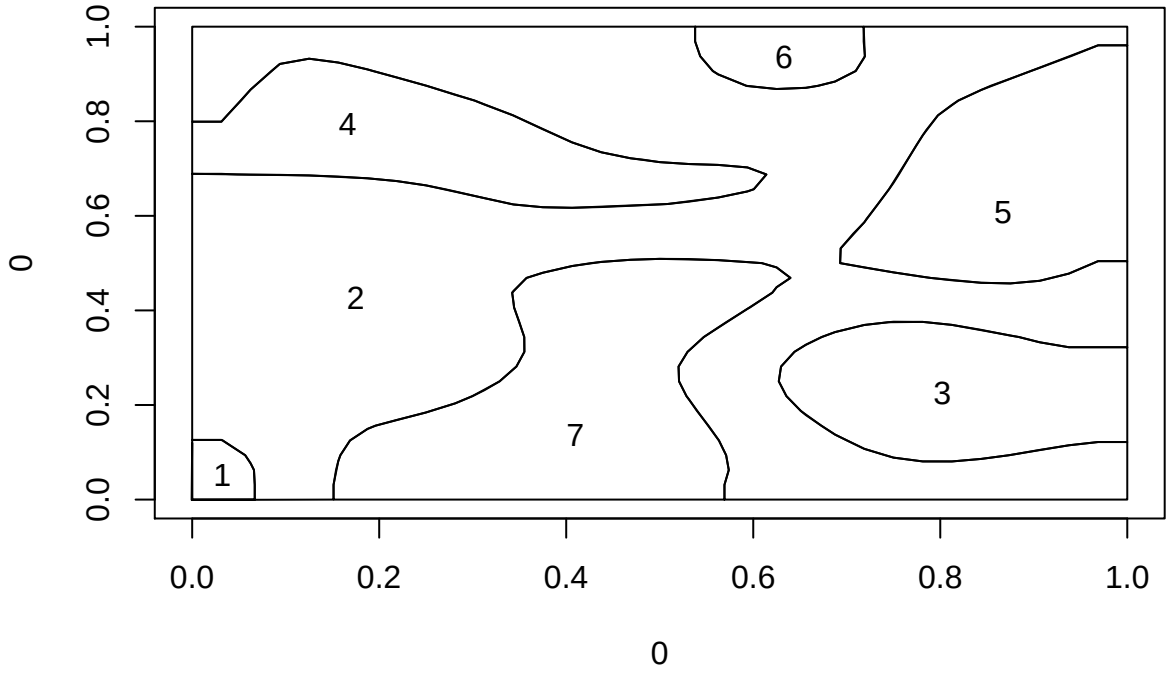
```
# Check the mean and standard deviation of generated data.
meanvarSimu(map)
```

```
##    raw mean kriged mean      raw sd   kriged sd
##    9.072091    8.858121    2.229093    1.964175
```

Step 2

Generate zoning Z from map and quantile vector with small zone correction. Small zones are kept until the end so that they get more chance to grow. LASTPASS=FALSE does not remove in a final step zones that are still too small.

```
#####################################################################
qProb=c(0.275,0.8)
criti=correctionTree(qProb,map,LASTPASS=FALSE)
# find best corrected zoning among last level zonings (7 zones in this case)
res=searchNODcrit1(qProb,criti)
b=res$ind[[1]][1]
K=criti$zk[[2]][[b]]
Z=K$zonePolygone
plotZ(Z,id=TRUE)
```

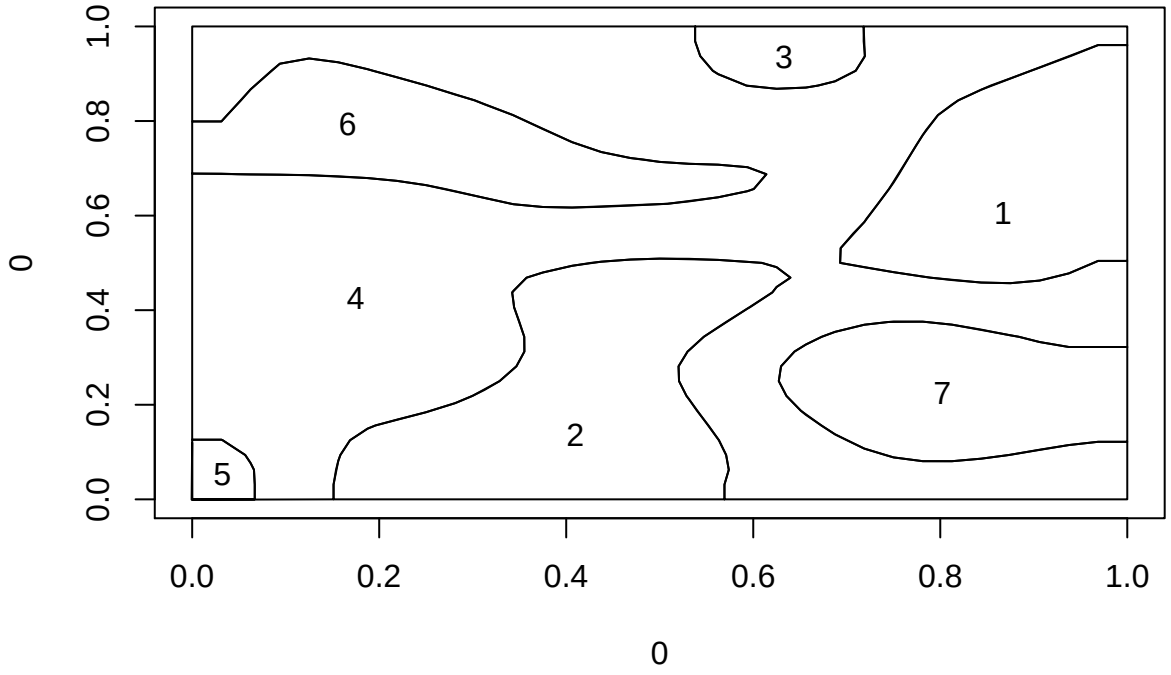



```
## NULL
```

Step 3

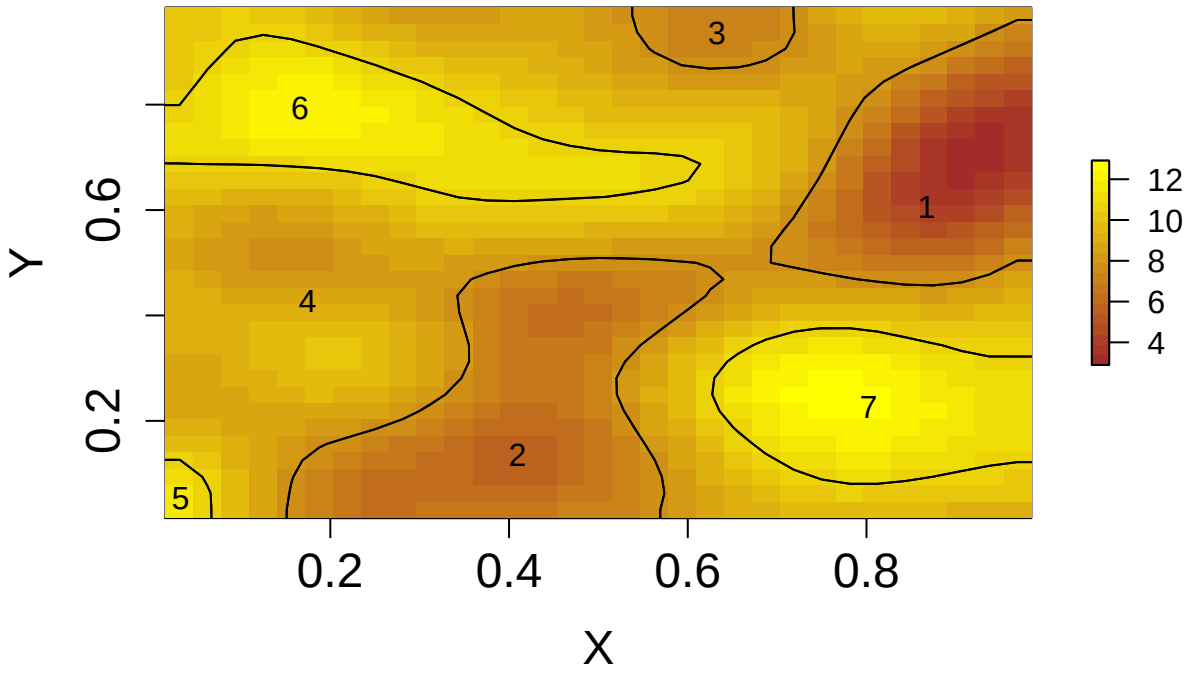
Order zones by attribute mean value

```
val=valZ(map,K)$val
ord=valZ(map,K)$ord
Z=orderZ(Z,ord)
plotZ(Z,id=TRUE)
```



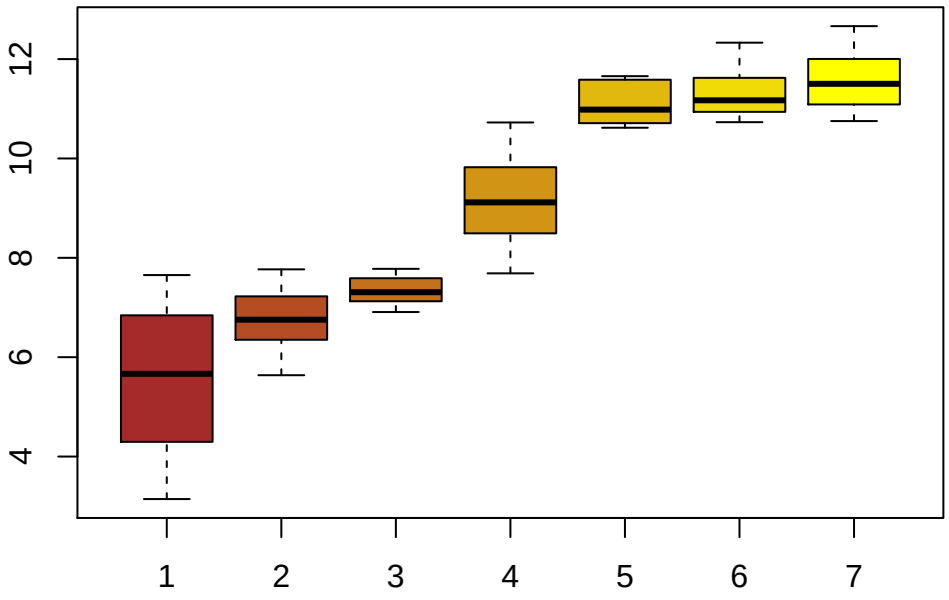
```
## NULL
```

```
#plot zoning together with zone distribution of values
palCol=colorRampPalette(c("brown","yellow"))
dispZ(map$step,map$krigGrid,zonePolygone=Z,id=TRUE,palCol=palCol(length(val)))
```

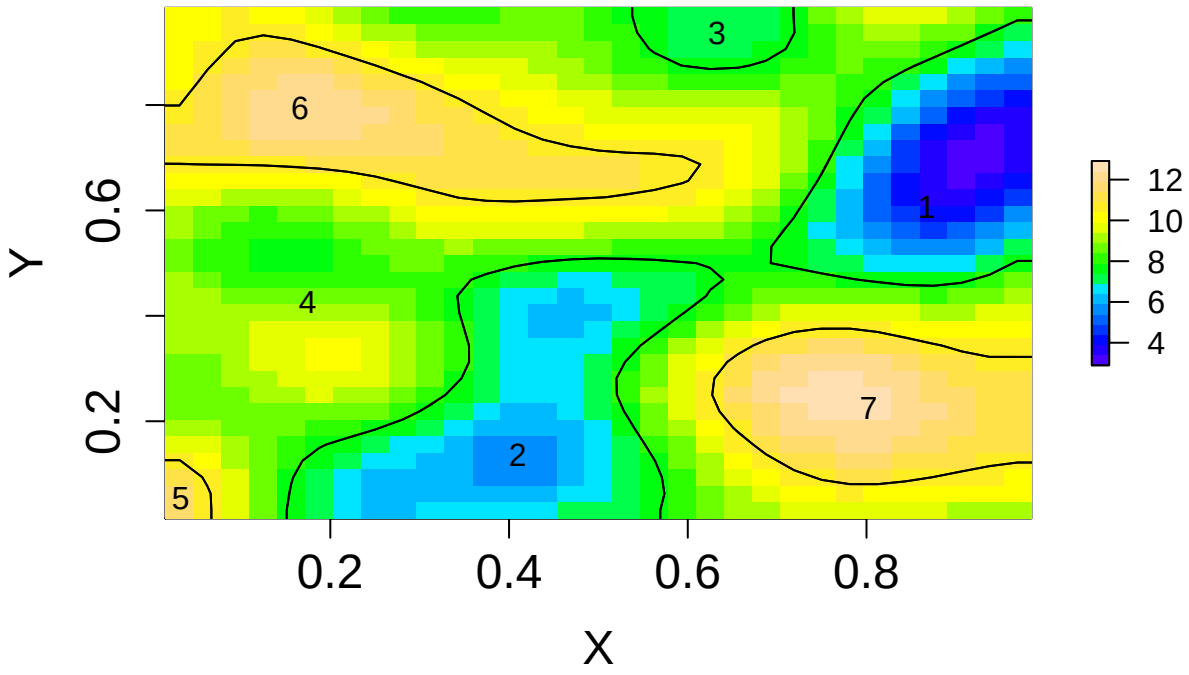



```
## NULL
```

```
boxplot(val,col=palCol(length(val)))
```

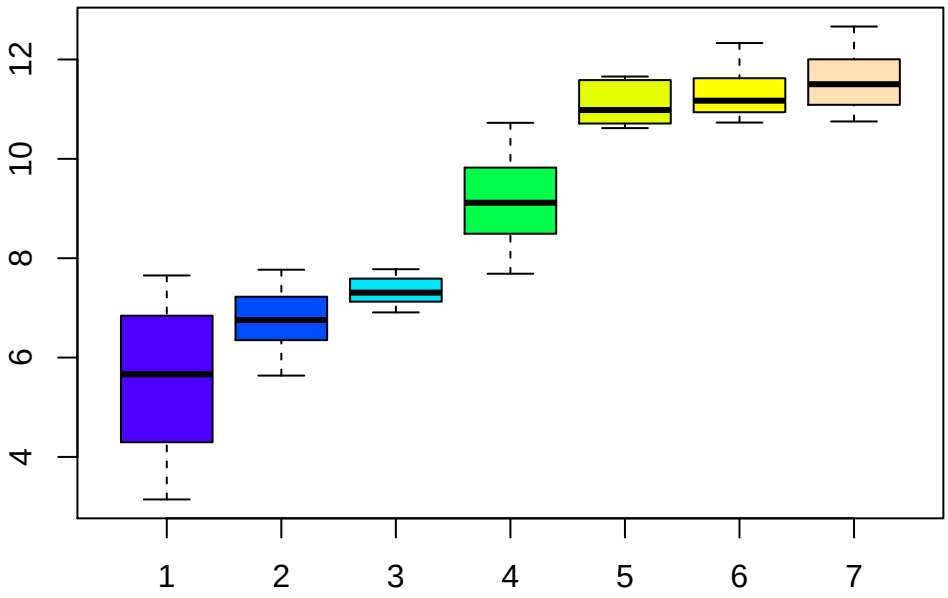



```
# another color palette
 dispZ(map$step,map$krigGrid,zonePolygone=Z,id=TRUE,palCol=topo.colors)
```




```
## NULL
```

```
boxplot(val,col=topo.colors(length(val)))
```




```
# Session informations
```

```
## R version 3.4.0 (2017-04-21)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Debian GNU/Linux 8 (jessie)
##
## Matrix products: default
## BLAS: /usr/lib/libblas/libblas.so.3.0
## LAPACK: /usr/lib/lapack/liblapack.so.3.0
##
## locale:
```

```
##  [1] LC_CTYPE=fr_FR.utf8       LC_NUMERIC=C
##  [3] LC_TIME=fr_FR.utf8        LC_COLLATE=C
##  [5] LC_MONETARY=fr_FR.utf8    LC_MESSAGES=fr_FR.utf8
##  [7] LC_PAPER=fr_FR.utf8       LC_NAME=C
##  [9] LC_ADDRESS=C              LC_TELEPHONE=C
## [11] LC_MEASUREMENT=fr_FR.utf8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] grid      stats     graphics  grDevices utils     datasets  methods
## [8] base
##
## other attached packages:
## [1] fields_8.15     maps_3.1.1      spam_1.4-0      sp_1.2-4
## [5] ggplot2_2.2.1   rgeos_0.3-23    geozoning_1.0.0
##
## loaded via a namespace (and not attached):
##  [1] Rcpp_0.12.11             compiler_3.4.0
##  [3] plyr_1.8.4               tools_3.4.0
##  [5] xts_0.9-7                digest_0.6.12
##  [7] gstat_1.1-5              evaluate_0.10.1
##  [9] tibble_1.3.1             gtable_0.2.0
## [11] lattice_0.20-35          rlang_0.1.1
## [13] yaml_2.1.14              stringr_1.2.0
## [15] knitr_1.17               raster_2.5-8
## [17] RandomFieldsUtils_0.3.25 rprojroot_1.2
## [19] spacetime_1.2-0          foreign_0.8-68
## [21] rmarkdown_1.6            deldir_0.1-14
## [23] magrittr_1.5             backports_1.1.0
## [25] scales_0.4.1             htmltools_0.3.6
## [27] intervals_0.15.1         RandomFields_3.1.50
## [29] maptools_0.9-2           colorspace_1.3-2
## [31] labeling_0.3             stringi_1.1.5
## [33] lazyeval_0.2.0           munsell_0.4.3
## [35] FNN_1.1                  zoo_1.8-0
```