Demonstrate zone junction

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Contents


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

This vignette illustrates the junction of 2 zones that do not have a common border but that are close to each other and share the same label. If the junction crosses another zone, it cannot be done.

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=80
map=genMap(DataObj=NULL,seed=seed,disp=FALSE,krig=2)
```

```
## [1] "DataObj=NULL, generating DataObj-seed= 80"
## [inverse distance weighted interpolation]
```

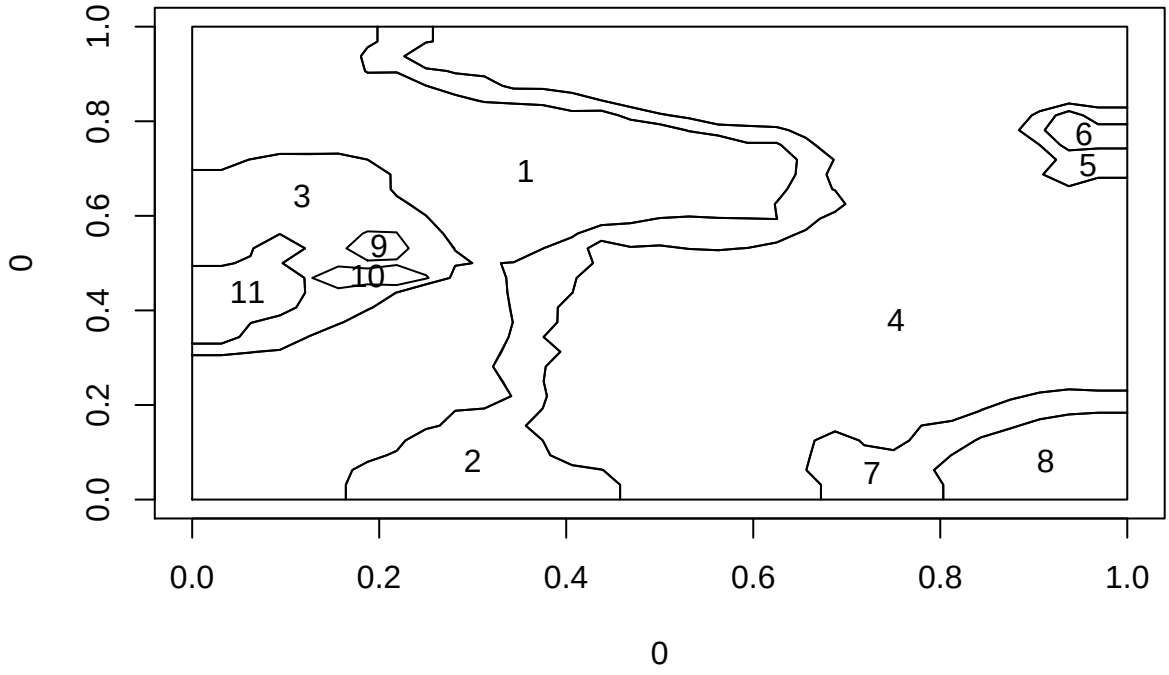
```
# Check the mean and standard deviation of generated data.
meanvarSimu(map)
```

```
##    raw mean kriged mean      raw sd   kriged sd
##    8.327609    8.244374    1.969228    1.310783
```

Step 2

Zoning Z is generated from map and quantile vector. Given a probability vector, a vector of values is obtained using the quantile function.

```
qProb=c(0.5,0.7)
qq=quantile(map$krigGrid,na.rm=TRUE,prob=qProb)
ZK=initialZoning(qProb,map) # names(ZK)  "resCrit"  "resDist" "resZ" "cL" "qProb"
# plot zoning (11 zones in this case)
K=ZK$resZ
Z=K$zonePolygone
plotZ(Z)
```




```
## NULL
```

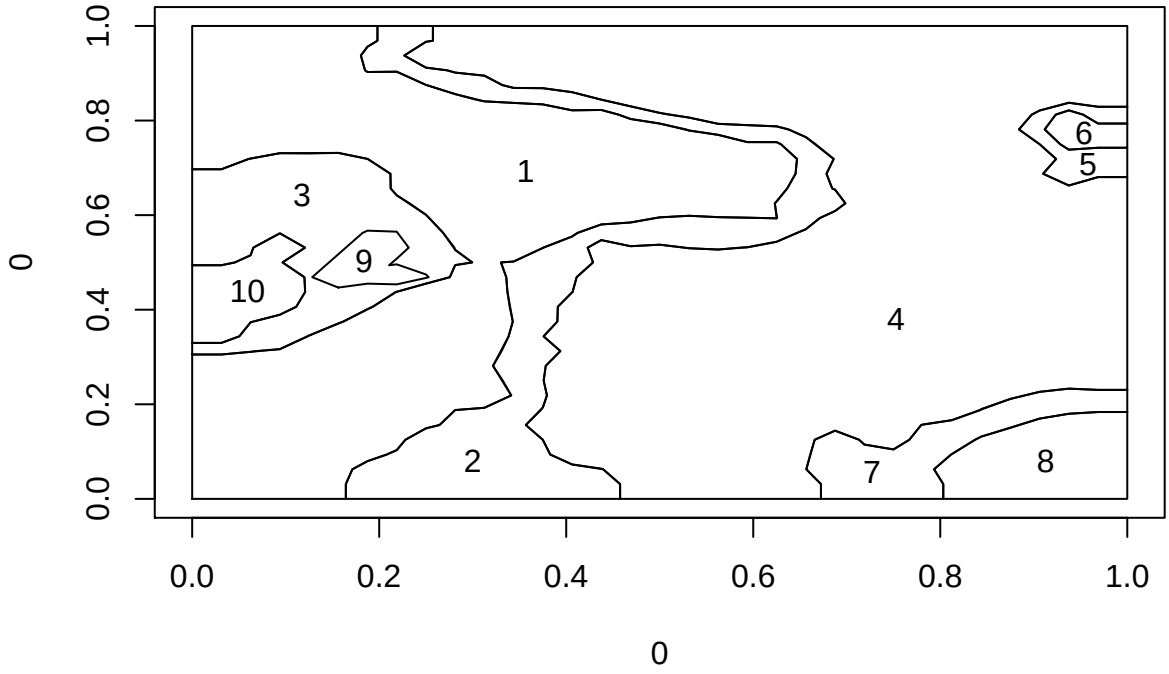
```
printLabZ(list(K)) # zones 9 to 11 have the same label(1)
```

```
## [1] "2q zone labels= c(3, 2, 2, 1, 2, 3, 2, 3, 1, 1, 1)"
```

```
## [[1]]
##  [1] 3 2 2 1 2 3 2 3 1 1 1
```

Step 3: Join zone 9 with another zone near by (zone 10)- both zones have the same label

```
kmi=optiRG(K,map,9,10,disp=1)
plotZ(kmi$zonePolygone)
```



```
## NULL
```

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
```