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title: "AsignacionClase7"
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date: '2022-04-18'
output: html_document
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```

```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
library(dplyr)
library(readxl)
library(ggplot2)
library(ape)
```

Asignacion Estadisticas Descriptivas

```{r}
#file.choose()#
XPABLO <- read_excel("C:\\Users\\logan\\OneDrive\\Escritorio\\Otros\
\Semestre 2022-1\\Computacion estadistica\\XPABLO.xlsx")
XPABLO <- XPABLO[-c(16,17,18,19)]
View(XPABLO)


```

```{r}
#Materia Organica XPABLO#
LongLat <- expand.grid(x = XPABLO$Long, y = XPABLO$Lat)
color<-cut(XPABLO$MO, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```

```{r}

##Indice de Moran Materia Organica##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$MO, dist_matrix_inv)
```

```{r}
#Calcio XPABLO#
color<-cut(XPABLO$Ca, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```

```{r}
```

```
##Indice de Moran Calcio##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia Ca##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$Ca, dist_matrix_inv)
```

```{r}
#Mg XPABLO#
color<-cut(XPABLO$Mg, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```


```{r}

##Indice de Moran Magnesio##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$Mg, dist_matrix_inv)
```

```{r}
#K XPABLO#
color<-cut(XPABLO$K, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```

```{r}

##Indice de Moran Potasio##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$K, dist_matrix_inv)
```
```

```{r}
#Na XPABLO#
color<-cut(XPABLO$Na, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```

```{r}

##Indice de Moran Sodio##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$Na, dist_matrix_inv)
```

```{r}
#Fe XPABLO#
color<-cut(XPABLO$Fe, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```

```{r}

##Indice de Moran Hierro##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$Fe, dist_matrix_inv)
```

```{r}
#Cu XPABLO#
color<-cut(XPABLO$Cu, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```

```{r}

##Indice de Moran Cobre##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
```

```r
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$Cu, dist_matrix_inv)
```


```{r}
#Zn XPABLO#
color<-cut(XPABLO$Zn, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```


```{r}

##Indice de Moran Zn##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$Zn, dist_matrix_inv)
```


```{r}
#CICE XPABLO#
color<-cut(XPABLO$CICE, breaks = 5)
plot(LongLat, pch = 15, cex = 1.5, col = color)

```


```{r}

##Indice de Moran CICE##
dist_matrix <- as.matrix(dist(cbind(XPABLO$Long, XPABLO$Lat)))
max(dist_matrix)
min(dist_matrix)
dim(dist_matrix)
##Inversa de la distancia MO##
dist_matrix_inv <- 1/dist_matrix
diag(dist_matrix_inv)<-0
dist_matrix_inv

Moran.I(XPABLO$CICE, dist_matrix_inv)
```