



INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS
PROGRAMA DE PÓS-GRADUAÇÃO EM SENSORIAMENTO
REMOTO

SER-300 - INTRODUÇÃO AO GEOPROCESSAMENTO

Docentes: Dra. Silvana Amaral e Dr. Marcos Adami

Discente: Tânia Beatriz Hoffmann

Atividade 8

Exercício proposto - Pedro R. Andrade

Estimativa de densidade – Kernel

Código

```
#instalacao de pacotes para a operacao
install.packages("geobr")
install.packages("spatstat")
install.packages("stars")

require(magrittr)
census <- geobr::read_census_tract(code_tract="DF", year=2010) %>%
  dplyr::filter(zone == "URBANO") %>%
  dplyr::select(code_tract)

schoolsdf <- geobr::read_schools() %>%
  dplyr::filter(abbrev_state == "DF")
plot(sf::st_geometry(census))
plot(sf::st_geometry(schoolsdf), add=T)
within <- sf::st_within(schoolsdf, census) %>%
  as.data.frame() %>%
  tibble::as_tibble() %>%
  dplyr::group_by(col.id) %>%
  dplyr::count()
census$col.id <- as.numeric(rownames(census))
census <- dplyr::left_join(census, within, by = "col.id") %>%
  tidyr::replace_na(list(n = 0)) %>%
  dplyr::arrange(desc(n))
sf::write_sf(census, "resultado.shp")

#Estimativa de densidade - Kernel
coords <- sf::st_coordinates(schoolsdf)%>%
  na.omit()
myppp <- spatstat.geom::as.ppp(coords,sf::st_bbox(schoolsdf))
den1 <- stats::density(myppp)
par(mfrow = c(1, 2))
plot(den1)
plot(myppp)
s1 <- stars::st_as_stars(den1)
stars::write_stars(s1, "myraster.tif")
```

den1

myppp

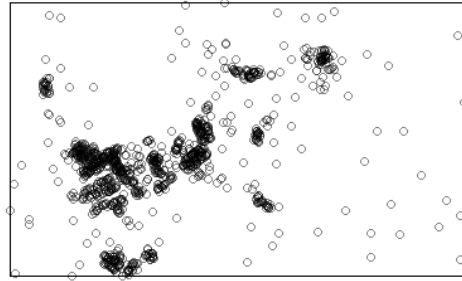
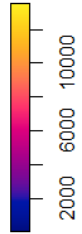
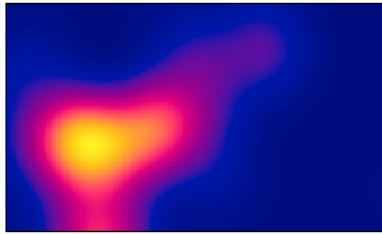


Figura 1. Resultado