

### ###DATA EXTRACTION

# Load libraries (not sure if all are needed)

```
library(raster)
library(rgdal)
library(glcm)
library(rgeos)
library(snow)
library(rminner)
library(splitstackshape)
library(data.table)
```

#Stack all the raster files

```
sas_image_map<-stack(sas_4band, sas_4band_glcm, sas_slope, sas_dis_vrm1,
sas_dis_vrm02)
```

### ###Extract data

#set directory name

```
shp.dir <- "shapefile"
```

#Load ground truthing data point shapefile

```
gt2019sas <- readOGR(dsn = shp.dir,layer="gt_sas_2019")
```

#Create buffer to extract data around ground truthing points

```
gt2019sas_15cm<-gBuffer(gt2019sas,width=0.075, byid = TRUE)
```

```
gtpts_sas<-gt2019sas_15cm ## Change name for more general code, so that the buffer
size can be changed
```

#Load ground truthing data

```
sas_gt <- read.delim("gt_sassendalen_summer2019_2020_02_06.txt")
```

#add unique ID

```
sas_gt$ID<-1:nrow(sas_gt)
```

#Extract values at buffer locations (cluster number needs to be adjusted)

```
beginCluster(50)
```

```
gtpts_value_sas=extract(x=sas_image_stack_all, y=gtpts_sas, df=TRUE)
```

```
endCluster()
```

```
extracted_data_sas<-merge(gtpts_value_sas, sas_gt, by="ID", sort = TRUE)
```