1. **Invarianz-paper Statistics and graphics**

This documentation includes the usage of multiple R-scripts to calculate statistical accuracy measures for different vector machines for classification and the creation of raster files for visualization.

**2.1. Statistical Analysis**

The output of the classification is given as .csv and .RData files. They should be saved to a folder named “results\_xxx” where “xxx” resembles a number (preferably the number of the run). The structure of the file path should be something like this:

*workingdirectory/…/results\_1/myaccuracy.RData*

Open the R-script “statistics\_main.R” and set the working directory. The script includes description for each step of processing. The functions called from other scripts also include explanations, which can be looked up by opening these scripts separately.

The output of the statistical calculations is written to the designated harddrive (path: “workingdirectory/table.final/mystats.csv”) as a comma separated .csv file. It is formatted to be copied to a table right away.

**2.2 Raster Creation**

It must be decided which data to use for the visualization as a raster image. Open the “make.raster\_main.R” R-script and put in your selections of data as shown in the example.

*“xxxColScaleBinary”*

where “xxx” is a number as in 2.1. Statistical Analysis.

Before running the code, the shapefiles used as input should be copied and renamed since they will be overwritten. Make sure the name in read.dbf() and write.dbf() are the same as your renamed shapefile.

Running the code will return raster tiles with the spatial resolution of the reference raster images (for “burning in” new values). Reference raster images should be saved under

*“workindirectory/raster/col\_referenz.tif”*

or

*“workindirectory/raster/hag\_referenz.tif”*

respectively.

The creation of a reference raster (if not done beforehand, use a GIS software) is necessary as the gdal\_rasterize function needs a raw raster file to “burn” the values into. The output raster files will be saved at

*“workindirectory/raster/cologne/myraster.tif”*

or

*“workindirectory/raster/hagadera/myraster.tif”*

respectively.

Naming of results: e.g.: CSCBSVM.tif for Cologne, inv. to scale, binary,…

**2.3. Visualization**

Visualization is done in GIS software of your choice (QGIS recommended).