# Metamodels and displacements inversion
# R installation notes

Rodolphe Le Riche, Nicolas Durrande and Valérie Cayol

October 9, 2017

## 1 TODOs

- read from cvs in cost function (rodo)

## 2 Prerequisites

1. Have R available on your computer, cf. `https://www.r-project.org/`
2. Optionally (but really helpful) have rstudio installed, cf. `https://www.rstudio.com`
3. Install the `lhs` package (either from Tools / Install Package in rstudio or with the command `install.packages("lhs")`.
4. Optional: if you want to load the data that are in matlab format (`file_name.mat`), install the "R.matlab" package (either from Tools / Install Package in rstudio or with the command `install.packages("ggplot2")`. But you can also load directly the ascii csv file (`file_name.csv`) from R

# 3 Running the demo step by step

# 4 Files list

- `mogi_3D.R` : calculate displacements on a digital terrain model from a point-wise spherical source.
- `plots_3d_full_grid.R` : Load a csv file (full grid), and plots its 3d data.
- `process_3d_full_grid_from_matlab.R` : Load a matlab file (full grid), processes it so that it is plotted and (commented out but working) saved in csv format. Displacements are calculated with `mogi_3D.R`.
- data files ending in `.mat` (matlab format) or `.csv` (csv format).