Input data

ARPA; ARPAACQUA -> ARPA (Apulia) geosensor network, fields Ostreopsis Ovata top sea and Ostreopsis Ovata bottom sea

MESA -> MESA air pollution study geosensor network, field NOx Concentration
TCEQO;TCEQT;TCEQW -> TCEQ (Texas) geosensor network, fields Air Temperature, Wind Speed and Ozone Concentration
NCDCP; NCDCS;NCDCT -> NCDC geosensor network, fields Solar energy, Precipitation, Air Temperature
SR -> SR geosensor network, field Diffuse solar radiation
SAC -> SAC geosensor network, field Air Temperature

Each dataset includes:
- pos.txt – geosensor network (geosensor Id, Latitude, Longitude)
- data.txt – observed data (time points on the rows, geosensors on the columns)

Implemented algorithms (by k-fold CV)
1. KRIGING - Ordinary Kriging for each time point
2. STKRIGING - STKriging for the entire data set
3. CoST - CoST^k with the window decomposition of the data set (window size varying between 1 and 6) and the selection of the top-ranked Principal Component of the windowed data as secondary co-variable
4. CoKrigingAll - CoKriging with the window decomposition of the data set (window size varying between 1 and 6)
5. CoST90 - CoST^k with the window decomposition of the data set (window size varying between 1 and 6) and the selection of the Principal Components explaining 90% of variability in windowed data as secondary co-variables

Usage:
- Open the script in R and customize “dirI<-??”, in order to specify the data set to be processed
- Run the customized script.
- Analyze the output data, which have been produced (e.g. rmse, nrmse, training and testing computation times for each fold and each window, charts).