DT

Geostats

D: cont. fixed. raster

Areal

discrete, fixed. set of entities

Point pattern

cont . fixed. lightening

Sa

Est. global stats; knowledge of variation, map. Sampling location+intensity

Random Cause+effect inference entire popn
Geo stratified X oversample, better precision
Grid Irregular shape, rect->cor 4 edge eff
Cluster Lots of plots in one location. x vario
Strat. covar Use info abt site

Design-based

global rec; probability sampling; random mech to select locations popn fixed access prob

Model-based

individual; Assumes location is random (x AC); popn properties -fn of rand. proc

AC

- Interaction
- Reaction
- Mis-specification

Real/ apparent

Isotropy
Stationarity
spatially rand process

1st same mean across pace, homogeneous
2nd spatial random process. locally homo, globally heterogeneous

Residuals

+ under-est. obs > pred

- over-est. obs < pred

spatial autocorr

Plot: equal pts&around leveled line ~0: linear.

Moran's I sensitive to extreme, not data dist
Geary's C both: global stats, areal data.

Compare distribution
Randomisation factorial to generate dist
Monte carlo sim big dataset, cont. run

MS

Ordinal rank, dist, stats
Categorical/nominal total count, freq
Interval scales, + -, no true 0
Ratio math op, true 0

DQ

- Manually/auto prepared
- Systematic errors
- Issue detection - outlier, compare

Variability
- measurement error
- inherent - natural
- execution, procedures

QC
- detect values
- decide-remove/ mention/modify

Extent extrapolation/singling out
Coverage interpolation for full
Support homo property. up/downscaling
Combination extra/interpolation/upscaling

idw

- simple, x outside value range
- no var w. predicted values
- do not need at least 150 plots

Small n-more variability. more n: avg out
Less weights: + duck eggs @ close obs

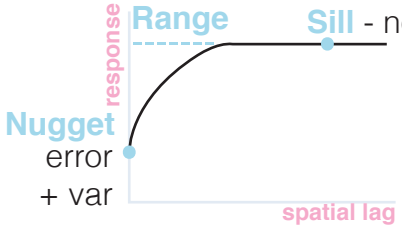
Kr

- est. vario, fit model
- fit into k equation + solve est
- predict value $\hat{Y}(x)$, est var

Assume: min var of $\hat{Y}(x)$, 2nd order stationarity (AC)

Co-kriging from two or more variables; assumes var linearly corr

Interpolation



- no corr
- variog. cloud
- dist b/w obs
- set bins, avg
- empirical vario

Mo

- spatial lag-β terms corr √ resi plot
- spatial error-β terms corr x , use scatterplot matrix

GLS use when corr; linearity not met
WLS use when assumption not met; fan-shaped residuals
OLS define neighbours, decide weight
MLE = OLS if assumptions met