ASQ CRE Prep course

Lesson III. A. 7. i.

Design of Experiments

Classical DOE

Select an Approach

Number of Factors	Comparative Objective	Screening Objective	Response Surface Objective
1	1-Factor completely randomized design	——	——
2 - 4	Randomized block design	Full or fractional-factorial	Central composite or Box-Behnken
5 or more	Randomized block design	Fractional-factorial or Plackett-Burman	Screen first to reduce number of factors

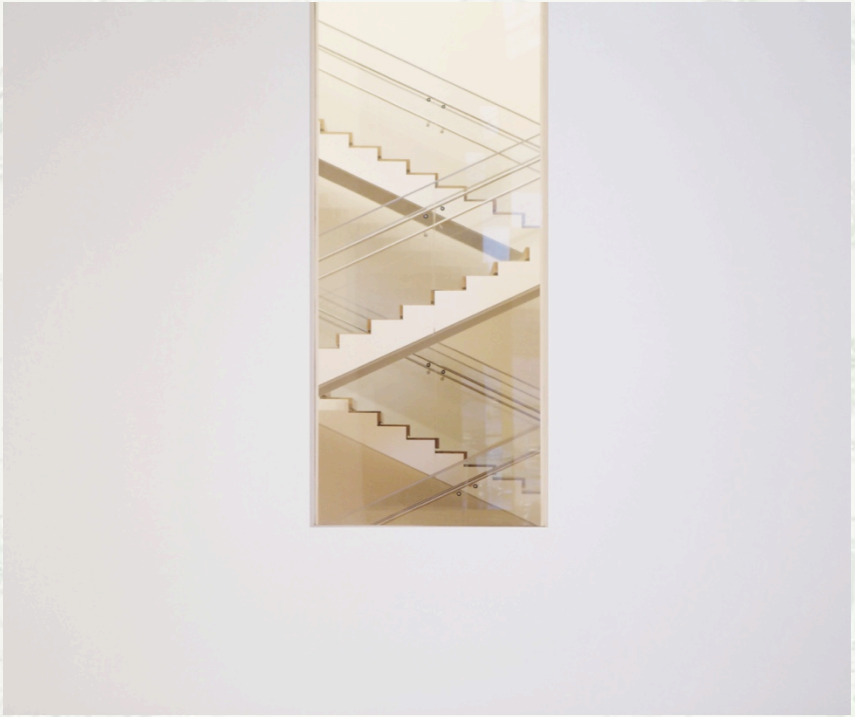
One-Factor Experiments

One way ANOVA

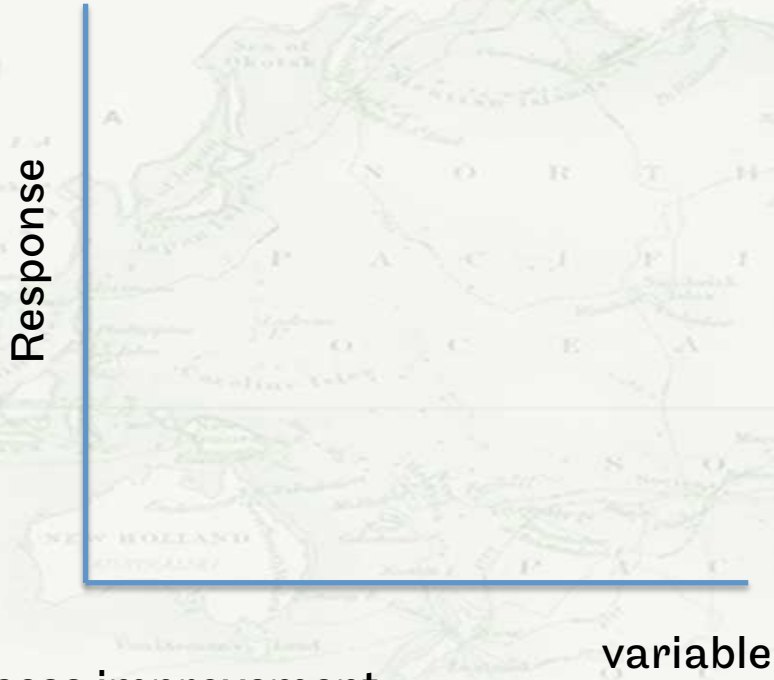
Hypothesis Test (two levels)

Linear regression

Correlation

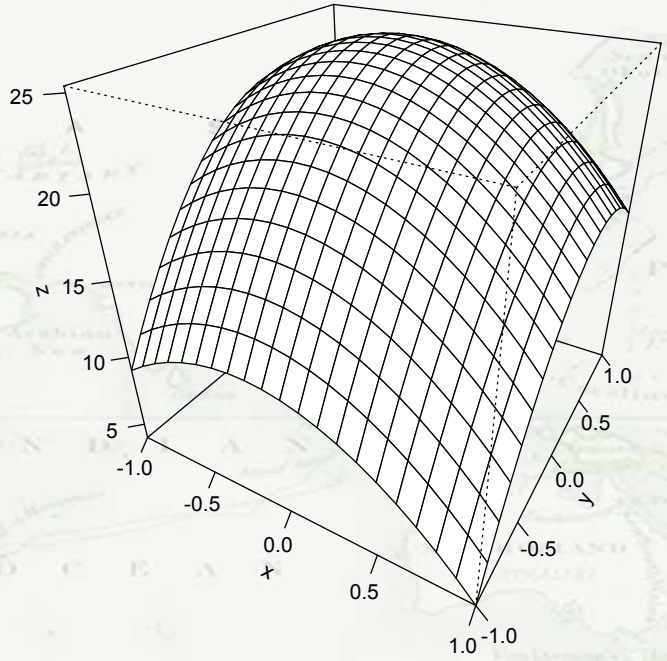


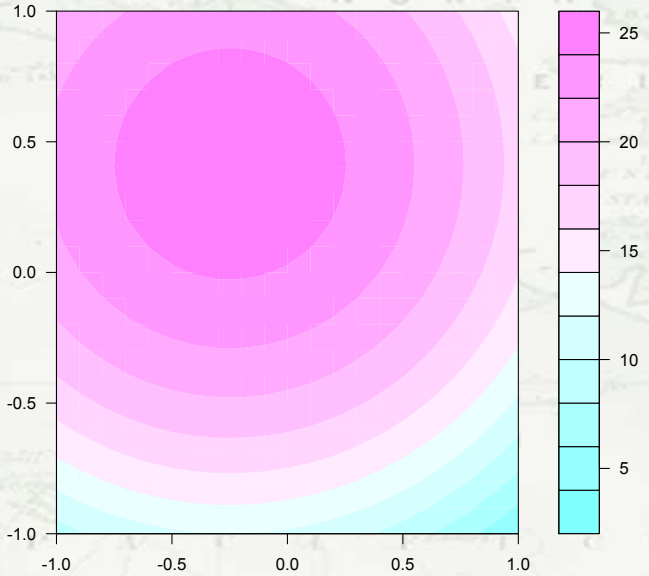
Evolutionary Operations (EVOP)



For continuous process improvement

Response Surface





Objective

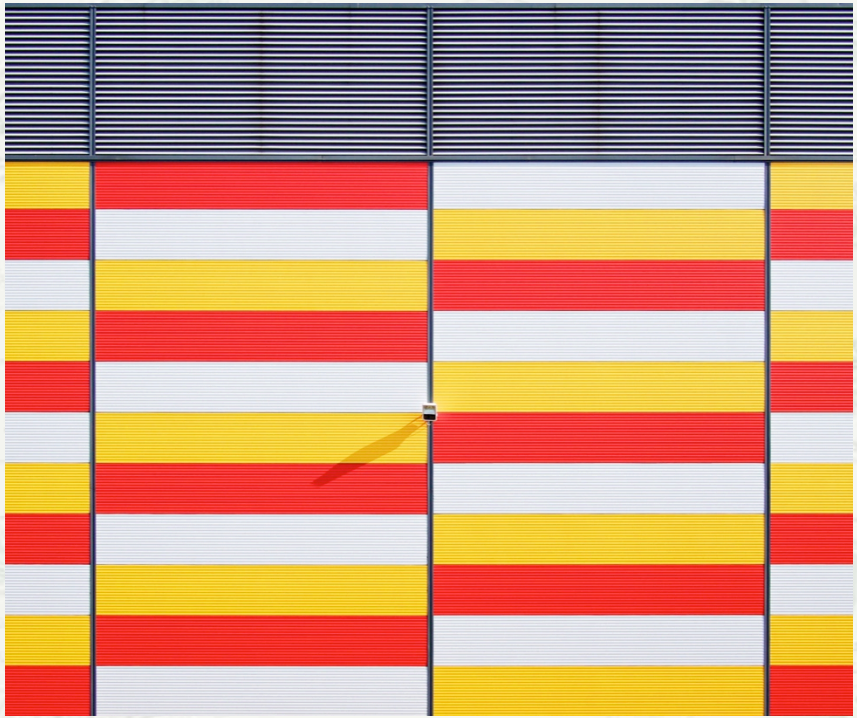
Comparative

Screening

Response surface

Optimizing

Optimal fitting (regression)



What are your hypothesis and assumptions?

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Lesson III. A. 7. j.

Design of Experiments

Various Designs