

“Finance”

Joachim Johansson: SimIns – software for ALM
Statistics and efficient front calculation

Carl Lindberg: Portfolio optimization – Barndorff-Nielsen & Shephard
invest $\frac{1}{n}$ in each of n “factors”

Erik Brodin: High-frequency financial data
Catastrophe insurance

Alexander Herbertsson: Credit risk via continuous time Markov Chains

New project: Credit risk using Barndorff-Nielsen & Shephard??

Should SimIns be continued in some way?

Design and analysis of experiments with Extreme Value distributed responses

Motivating example: corrosion in lightweight materials

Whats different?

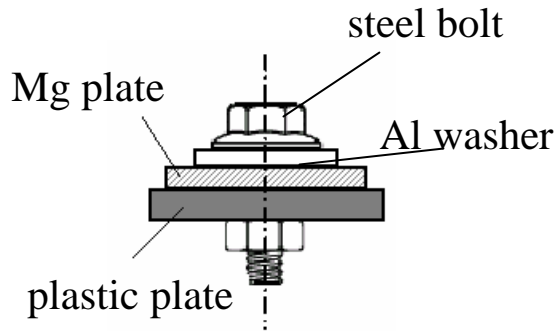
- focus on tails, not means
- typically more than one parameter distribution
- sometimes monotonicity (corrosion irreversible)

So far: Hierarchical random effect models, in particular “one-way random effect model”

Strategy for pairwise comparisons

Laboratory experiment in climate chamber at VCC

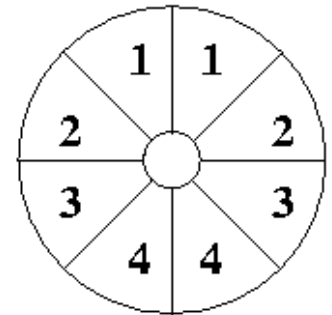
- 3 different bolt coatings
- 3 time points
- 3 assemblies per coating and time point
- maximum pit depth measured in 8 sectors for each assembly



test assembly



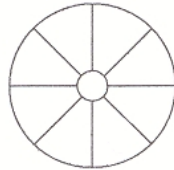
corroded Mg plate



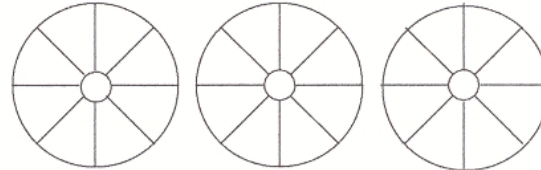
maximum pit depth
measured in sectors

Preliminary study of the data

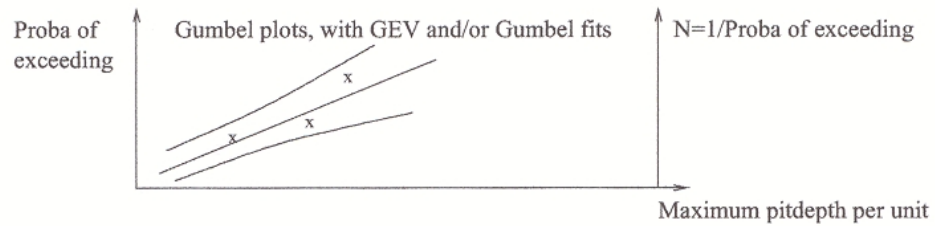
Are units homogeneous ?



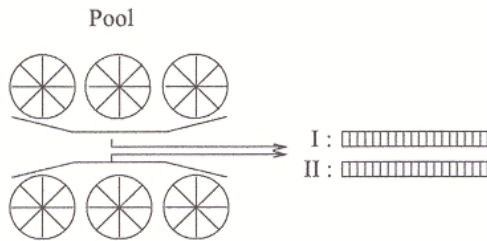
Are units replicates ?



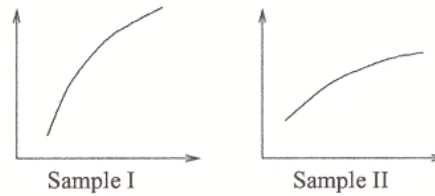
Results for one treatment



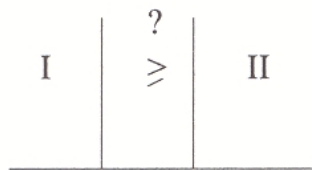
Results for two treatments



Are there same mechanisms ?



Which treatment is best ?



Choice of model ?

