General Full Factorial Designs With *k* Factors

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These slides are available on-line at:

http://www.cse.wustl.edu/~jain/cse567-08/

- Model
- Analysis of a General Design
- Informal Methods
  - Observation Method
  - Ranking Method
  - Range Method

General Full Factorial Designs With k Factors

- Model: k factors $\Rightarrow 2^k$-1 effects

  k main effects

  $\binom{k}{2}$ two factor interactions,

  $\binom{k}{3}$ three factor interactions,

  and so on.

Example: 3 factors A, B, C:

$$y_{ijkl} = \mu + \alpha_i + \beta_j + \xi_k + \gamma_{ABij} + \gamma_{ACik} + \gamma_{BCjk} + \\ + \gamma_{ABCijk} + e_{ijkl}$$

$$i = 1, \ldots, a; \quad j = 1, \ldots, b; \quad k = 1, \ldots, c; \quad l = 1, \ldots, r;$$