

LTCC Design of Experiments

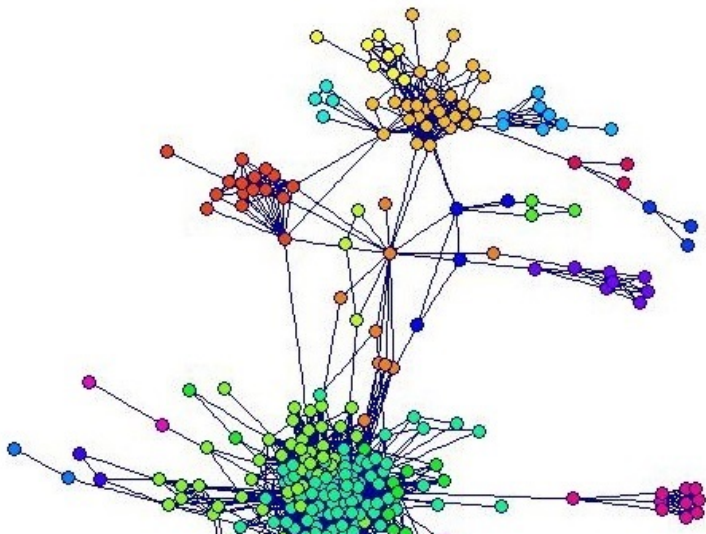
Week 4: Interence and Multi-objective Experimentation

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Introduction

Welcome

The main focus is on two areas - experimental design under treatment interference and multi-objective experimental design - that are active research areas.



Common DoE assumptions

To a greater or lesser degree, the ideas and principles from Weeks 1-3 are dependent on a number of assumptions holding:

- ▶ that the expected response from a given unit only depends on the treatment applied to that unit, and not on the treatments applied to any other units (*stable unit treatment value assumption*);
- ▶ for factorial, response surface and optimal designs, that a reasonable approximating statistical model can be specified that leads to unbiased estimation of quantities of interest;
- ▶ for optimal designs, that the aim of the experiment can be neatly encapsulated in a single mathematical expression or objective function.

References