Partially Balanced Incomplete Block Design.

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Introduction

- An incomplete block design is said to be PBIB design if it satisfies the following conditions:
  - i. The experimental material is divided into b blocks of k units each, different treatments being applied to the units in the same block.
  - ii. There are t treatments each of which occurs in r blocks.
  - iii. Any two treatments are either 1st, 2nd, . . ., mth associates; each treatment is the 0th associate of itself and of no other treatment.
  - iv. Each treatment has n_u uth associates (u = 0, 1, . . . , m).

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- Properties of PBIB design
  - v. If any two treatments are kth associates, then the number of treatments common to the uth associates of the first and the vth associates of the second is p_{uv}^{k}, independent of the pair of kth associates.
  - vi. Any two treatments that are uth associates appear together in λ_u blocks.
- The terms $t, b, r, k, \lambda_1, \lambda_2, ..., \lambda_m, n_1, ..., n_m$ are called the parameters of the first kind and the p_{uv}^{k} are called parameters of the second kind

Thank You!