Agrawal's Conjecture for Triple arrays

Abstract: Agrawal's Conjecture states that, (in the canonical case), there is a Triple array if and only if there is a symmetric balanced incomplete block design.

- Symmetric balanced incomplete block designs (SBIBDs) can be thought of as generalized finite projective planes, i.e., subset structures.
- Triple arrays are row-column designs used in statistical experiments when two-way elimination of heterogeneity is desirable.

In 1966, Agrawal suggested a construction for Triple arrays, starting from SBIBDs. However, for one step in the construction he could not prove that it always can be done, and it had to be carried out by trial and error. Now it is known that given a Triple array we can construct an SBIBD. But the most worthwhile direction is still open, although many examples of Triple arrays have been constructed and no counterexamples have been found. In this seminar we give a brief background of the main players and what has been done concerning existence and construction, including our ongoing research in this area.