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Searching for Balanced Incomplete Block Designs that Admit 0-ULSE Colourings

A uniform 0-locally semi-equitable (0-ULSE) ℓ-colouring of a balanced incomplete block design (BIBD) is a colouring of its points where within each block one colour is absent and the $\ell - 1$ other colours appear the same number of times. In this talk, we search for parameters (v, k, λ) where there exists a (v, k, λ)-BIBD that admits a 0-ULSE colouring. Joint work with Andrea Burgess, David Pike, and Thijs van Veluw.