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Construction of universally optimal design using 3^n- factorial design

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ABSTRACT : A method of constructing equireplicate variance balanced (VB) and efficiency balanced (EB) design with unequal block sizes is proposed using 3^n-symmetrical factorial design with illustration. The method suggested here is based on deleting control as well as all the treatment combinations of second level and merging the first highest order linear effect with each first level main effects separately. Further optimality of the constructed design has been checked and found it to be universally optimal.

KEY WORDS : Balanced incomplete block design, Variance balanced design, Efficiency balanced design, Universally optimal design, 3^n-factorial design