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OPTIMAL RUN ORDERS IN THE PRESENCE OF SERIAL CORRELATION

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The responses obtained from response surface designs that are run sequentially often exhibit serial correlation or time trends. The order in which the runs of the design are performed then has an impact on the precision of the parameter estimators. We propose the use of a variable-neighbourhood search algorithm to compute run orders that guarantee a precise estimation of the effects of the experimental factors. The focus will be on D-optimal run orders for two-level factorial designs and central composite designs in the presence of an AR(1) autocorrelation pattern.

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