

D-optimal designs for binary response models in mixture experiments with linear logit link

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In this talk, *D*-optimal designs for binary response models in mixture experiments are discussed. This kind of model setting occurs in many chemical and industrial experiments. Under the linear logit link, Sitter and Torsney (1995) have provided *D*-optimal designs for binary response models with two explanatory variables on the first quadrant of R^2 as the design space. In this work, we first present an approach to obtain an admissible class of designs with reduced number of optimal supports, then the *D*-optimal designs may also be obtained with more insights on the structure appeared there. It is helpful for the search of *D*-optimal designs on other design spaces with more restrictions. Later under the design space with constraints due to the mixture restriction, we obtain the *D*-optimal designs for binary response models under the linear logit link in a mixture design space.

Key words and phrases: Essentially complete class of designs, reduced number of optimal supports, restricted design space.