

A note on the de la Garza phenomenon for locally optimal designs

Holger Dette, Viatcheslav B. Melas

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The celebrated de la Garza phenomenon states that for a polynomial regression model of degree $p-1$ any optimal design can be based on at most p design points. In a remarkable paper, Yang [Ann. Statist. 38 (2010) 2499--2524] showed that this phenomenon exists in many locally optimal design problems for nonlinear models. In the present note, we present a different view point on these findings using results about moment theory and Chebyshev systems. In particular, we show that this phenomenon occurs in an even larger class of models than considered so far.

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