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*Planar functions over finite fields with characteristic two*

Classical planar functions are functions from a finite field to itself and give rise to finite projective planes. They exist however only for fields of odd characteristic. I will introduce their natural counterparts in characteristic two, which are also called planar functions. They again give rise to finite projective planes. Then we will talk about the relation between planar functions and semifields, and propose several interesting open questions on them. Finally, we concentrate on two types of planar functions and give several recent results on their classifications.