

On the semifield planes of order 5^4 and dimension 2 over the kernel

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In this talk we consider the problem of determining all nonDesarguesian semifield planes of order 5^4 and kernel $\text{GF}(5^2)$. We show that the class of p -primitive planes is the largest class and besides those the only other semifield planes in the class under study are the generalized twisted field planes .