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More on exceptional scattered polynomials

Let f be an \mathbb{F}_q -linear function over \mathbb{F}_{q^n} . If the \mathbb{F}_q -subspace $U = \{(x^{q^t}, f(x)) : x \in \mathbb{F}_{q^n}\}$ defines a maximum scattered linear set, then we call f a scattered polynomial of index t . We say a function f is an exceptional scattered polynomial of index t if the subspace U associated with f defines a maximum scattered linear set in $PG(1, q^{mn})$ for infinitely many m . Exceptional scattered monic polynomials of index 0 (for $q > 5$) and of index 1 have been already classified (Bartoli-Zhou, Exceptional scattered polynomials, J. Algebra 2018). In this work, we investigate the case $t \geq 2$.