

# Cameron-Liebler sets in projective and polar spaces: an overview

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A Cameron-Liebler set is a set of subspaces in a finite projective or polar space for which many equivalent definitions are known, both algebraic and combinatorial ones. Cameron and Liebler originally investigated Cameron-Liebler line sets in  $\text{PG}(3, q)$ . A line set  $S$  is Cameron-Liebler if every line spread in  $\text{PG}(3, q)$  has the same number of lines in common with  $S$ . After a large number of results regarding these sets were obtained, other types of Cameron-Liebler sets were defined. I will give an overview of the different Cameron-Liebler sets, and give some new characterisations and classification results about Cameron-Liebler sets of  $k$ -spaces in  $\text{PG}(n, q)$  and about Cameron-Liebler sets of generators in polar spaces.