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Heide Gluesing-Luerssen* (heide.gl@uky.edu). *Distance distribution of cyclic orbit codes.*

Cyclic orbit codes are subspace codes that arise as the orbit of an \mathbb{F}_q -subspace in \mathbb{F}_{q^n} under the natural action of the cyclic group $\mathbb{F}_{q^n}^*$. We discuss the distance distribution of cyclic orbit codes, where the distance is defined as the subspace distance. We show that for optimal full-length orbit codes (i.e., the cardinality is maximal and distance is maximal for that cardinality) the distance distribution depends only on q, n and the dimension of the generating subspace. For full-length codes with near-maximal distance, the distance distribution depends on an additional parameter, which is closely related to the number of fractions in \mathbb{F}_{q^n} that can be obtained from elements of the generating subspace. This is joint work with Hunter Lehmann. (Received August 09, 2020)