Some new classes of cyclic codes with three or six weights.

Summary: In this paper, a class of three-weight cyclic codes over prime fields $\mathbb{F}_p$ of odd order whose duals have two zeros, and a class of six-weight cyclic codes whose duals have three zeros are presented. The weight distributions of these cyclic codes are derived.

Keywords: cyclic code; weight distribution; exponential sum; quadratic form

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