

T-DIRECT CODES - A NECESSARY AND SUFFICIENT CONDITION

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The class of T-Direct codes is a generalization to the so-called LCD codes. A T-Direct codes is defined as the set of T F-ary linear codes $\Gamma_1, \Gamma_2, \dots, \Gamma_T$ such that $\Gamma_i \cap \Gamma_i^\perp = \{0\}$, where $\Gamma_i^\perp = \Gamma_1 \oplus \Gamma_2 \oplus \dots \oplus \Gamma_{i-1} \oplus \Gamma_{i+1} \oplus \dots \oplus \Gamma_T$ is the dual of Γ_i with respect to the direct sum $\Lambda = \Gamma_1 \oplus \Gamma_2 \oplus \dots \oplus \Gamma_T$ for each $i = 1, 2, \dots, T$ and is denoted by $(\Gamma_1, \Gamma_2, \dots, \Gamma_T)$. In this paper, a necessary and sufficient condition for a set of T cyclic codes to constitute a T-Direct code is given. Also we have enunciated an application of T-Direct code over T-User F-adder channel.