

T-DIRECT CODES: AN APPLICATION TO BAC

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A T-Direct codes is defined as the set of T F-ary linear codes $\Gamma_1, \Gamma_2, \dots, \Gamma_T$ such that $\Gamma_i \cap \Gamma_i^\perp = \{0\}$ for each i, 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 $\Lambda = \Gamma_1 \oplus \Gamma_2 \oplus \dots \oplus \Gamma_T$. An algebraic characterization to this class of codes is given. An application of T-Direct codes to the noiseless T-User binary Adder channel is also presented.

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