On the spectrum problem for the 3-uniform loose 5-cycle

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Let $K_n^{(3)}$ denote the complete 3-uniform hypergraph of order n and let H denote the 3-uniform hypergraph with vertex set $\{v_1, v_2, \ldots, v_{10}\}$ and edge set $\{\{v_1, v_2, v_3\}, \{v_3, v_4, v_5\}, \{v_5, v_6, v_7\}, \{v_7, v_8, v_9\}, \{v_9, v_{10}, v_1\}\}$. We find necessary and sufficient conditions for the existence of an H-decomposition of $K_n^{(3)}$.

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