

# “Sparse” decompositions of even-regular graphs

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Let  $G$  be a  $4k$ -regular graph with  $k \geq 2$ . We show that  $G$  can be decomposed into  $k$  4-regular spanning subgraphs  $G_1, G_2, \dots, G_k$ , each of which does not contain a subgraph that is isomorphic to  $K_5 - e$ . In the case when  $m$  is even, our results give a more transparent proof of a result by Oksimets that states that every connected  $2m$ -regular graph  $G$  with  $m \geq 2$  and  $|E(G)|$  divisible by 3 can be decomposed into paths of length 3.