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Cycle decompositions of $3K_m$

We consider the problem of determining necessary and sufficient conditions for the existence of a decomposition of the complete multigraph λK_m into cycles of length k (also called a $(\lambda K_m, C_k)$ -design or a k -cycle system of λK_m). This problem remains open in general. Notably, necessary and sufficient conditions are known for $\lambda = 1$ or 2 (Alspach, Gavlas, Šajna, Verrall), but have not been determined for greater values of λ . In this talk, we discuss progress towards the case $\lambda = 3$.