

# Degree-Splittability of $k$ -regular graphs

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## Abstract

A graph  $G$  with an even number of edges is *degree-splittable* if  $G$  decomposes into two graphs with identical degree lists. We extend the concept to graphs with an odd number of edges by requiring a decomposition into two graphs with degree lists that are identical except that two of the degrees in one subgraph are one less than the corresponding terms in the degree list of the other subgraph.

In this talk we show that every 3-regular graph is degree-splittable using degrees 1 and 2 only. This result implies also (after some additional work) that a 5-regular graph having a 2-factor is degree-splittable using degrees 2 and 3 only. This is joint work with Ozkahya Lale and Douglas B. West.