

A constructive solution to the Oberwolfach problem with a large cycle

Tommaso Traetta

University of Brescia, Italy, tommaso.traetta@unibs.it

For every 2-regular graph F of order v , the Oberwolfach problem $OP(F)$ asks whether there is a 2-factorization of K_v (v odd) or K_v minus a 1-factor (v even) into copies of F . Posed by Ringel in 1967 and extensively studied ever since, this problem is still widely open. In this talk, we show how to build solutions to $OP(F)$ whenever F contains a cycle of length greater than an explicit lower bound. Our constructions combine the amalgamation-detachment technique with methods aimed at building $(1, 2)$ -decompositions of K_v with an automorphism group having a regular action on the vertex-set.