On certain 2-Rotational Cycle Systems of Complete Graphs

Andrea Vietri*

Abstract

We exhibit 2-rotational k-cycle systems of K_v for all admissible v, k such that $v < 3k$ and $GCD((v-1)/2, k) = 2$. For our purposes we extend the notions of *partial difference* and *type* to the 2-rotational case. The required terminology, as well as the basic properties and techniques, still survive if the GCD constraint is dropped. Therefore, while dealing with the mentioned case we prepare the ground for a more general result, namely settling the existence problem for all admissible $v < 3k$.

Keywords: partial difference, 2-rotational cycle system, 2-rotational difference system.

*Dipartimento Me.Mo.Mat. , Università Roma1, via A. Scarpa 16, 00161 Roma, Italia; e-mail: vietri@dmmm.uniroma1.it