

Title: On a Commuting Graph on Conjugacy Classes in Groups

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Abstract: If G is a group, let $A(G)$ be the graph with vertices consisting of the non-trivial conjugacy classes of G and two non-trivial classes C and D are connected if there exist c in C and d in D such that $cd=dc$. We show that if G is either a finite solvable group or an infinite solvable periodic group, then $A(G)$ has at most two components, each of diameter at most 15.

We also investigate finite and periodic non-abelian groups G satisfying one of the following properties: (i) there are no edges between non-central conjugacy classes of G ; (ii) there are no edges between finite conjugacy classes of G . Joint work with Patrizia Longobardi and Mercede Maj.