Factorization graphs of finite groups

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Abstract. We introduce the factorization graph of a finite group and study its connectedness and forbidden structures. We characterize all finite groups with connected factorization graphs and classify those with connected bipartite factorization graphs. Also, we obtain a classification of all groups with claw-free, $K_{1,4}$-free, and square-free factorization graphs, excluding the non-solvable groups in the latter case.

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