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Topologically Locally Finite Groups with a CC-Subgroup

A proper subgroup M of a finite group G is called a CC-subgroup of G if the centralizer $C_G(m)$ of every $m \in M^\# = M \setminus \{1\}$ is contained in M . Such finite groups had been partially classified by S. Williams, A. S. Kondrat'iev, N. Iiyori and H. Yamaki, M. Suzuki, W. Feit and J. G. Thompson, M. Herzog, Z. Arad, D. Chillag and others. In “Classification of Finite Groups with a CC-subgroup” [Communications in Algebra 32 (2004) 2087–2098] the present authors, having taken all this work into account, classified all finite groups containing a CC-subgroup.

As an application, in the present paper, we classify totally disconnected topologically locally finite groups, containing a topological analogue of a CC-subgroup.

Keywords: CC-subgroups, prime graph, compactness conditions, locally compact groups.

MSC: 22D05; 20E18, 20F50