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Department of Mathematics, 5245 N. Backer Ave M/S PB108, Fresno, CA 93740-8001. *Local
Characterization of LFS-Groups of p -Type*. Preliminary report.

An LFS-group is an infinite simple group such that every finitely generated subgroup is finite.

Let G be an LFS-group.

The set $K = \{(H_i, M_i) | i \in I\}$ is a Kegel cover for G if H_i is a finite subgroup of G and M_i is a maximal normal subgroup of H_i for all $i \in I$ such that for each finite subgroup H of G there exists $i \in I$ with $H \leq H_i$ and $H \cap M_i = 1$. A factor of K is a group H_i/M_i with $i \in I$.

G is finitary if there exist a field K and a faithful KG -module V such that $\{v^g - v | v \in V\}$ is finite dimensional for all $g \in G$.

G is of p -type for some prime p if G is not finitary and every Kegel cover for G contains at least one factor that is isomorphic to a classical group defined over a field in characteristic p .

We will discuss the following theorem :

Let G be a non-finitary LFS-group. Then G is of p -type if and only if there exist a prime q and $x \in G$ of order a power of q such that $\langle x^Q \rangle$ is solvable for all q -subgroups Q of G with $x \in Q$.

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