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Stefaan Dirk Delcroix*, Stefaan Delcroix, Department of Mathematics, 5245 N. Backer Ave. M/S PB108, Fresno, CA 93740-8001. *Block-Diaogonality of LFS-Groups of p -Type*. Preliminary report.

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

The set $K = \{(H_i, M_i) | i \in I\}$ is a Kegel cover of a LFS-group G if H_i is a finite subgroup of G and M_i is a maximal normal subgroup of H_i for all $i \in I$ and if 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 $i \in I$.

Let p be a prime. C is the class of all finite groups isomorphic to a classical group defined over a field in characteristic p .

A LFS-group G is of p -type if every Kegel cover of G has a factor in C .

P is the class of all finite groups S such that $S/O_p(S) = S_1 \dots S_{n_S}$ where S_i is a component of $S/O_p(S)$ and $S_i/Z(S_i) \in C$ (with vector space V_S^i) for $1 \leq i \leq n_S$.

We will discuss the following theorem :

Let G be a LFS-group of p -type. Then G has a Kegel cover K such that $S \in P$ for all $(S, M) \in K$ and if $(S, M), (T, N) \in K$ with $S \leq T$, then for $1 \leq i \leq n_T$ and any non-trivial composition factor W for S on V_T^i , there exists a unique $1 \leq j \leq n_S$ such that S_j does not act trivially on W ; moreover W is a natural module for S_j .

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