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Departamento de
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Universidad Zaragoza

Seminario de Álgebra

En memoria de M. Pilar Gállego

Conferencia

por

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Título:

“Thompson-like characterization of solubility for products of groups”

A remarkable result of Thompson states that a finite group is soluble if and only if its two-generated subgroups are soluble. This result has been sharply generalized, and it is in the core of a wide area of study in the theory of groups, aiming for global properties of groups from local properties of two-generated (or more generally, n -generated) subgroups. We report about an extension of Thompson's theorem from the perspective of factorized groups. We prove that for a finite group $G = AB$, with A, B subgroups of G , if (a, b) is soluble for all $a \in A$ and all $b \in B$, then $[A, B]$ is soluble. In that case, the group G is said to be an *S-connected product* of the subgroups A and B , for the class S of all finite soluble groups. As an application, deep results about connected products of finite soluble groups, for other relevant classes of groups, are extended to the finite universe.

Collaboration with M. P. Gállego (U. Zaragoza, Spain), P. Hauck (U. Tübingen, Germany), L. Kazarin (U. Yaroslavl, Russia), A. Martínez-Pastor (U. Politècnica de València, Spain)

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