

## ALGEBRA SEMINAR

## The solubility graph of a finite group

Carminé Monetta

University of Salerno

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**Abstract.** The solubility graph associated with a finite group  $G$  is a simple graph whose vertices are the elements of  $G$ , and there is an edge between two distinct vertices if and only if they generate a soluble subgroup. The aim of this talk is to present some new results related to the solubility graph, underlining how graph properties affect the structure of the group  $G$ . In particular, we will focus on the set of neighbors of a vertex investigating both arithmetic and structural properties of this set.

This is a joint work with Banafsheh Akbari and Costantino Delizia.