

Abstract

Oberwolfach Workshop:

Finite Groups, Fusion Systems and Applications

Dates:

16 March - 21 March 2025 (Code: 2512)

Organizers:

Inna Capdeboscq, Coventry

Ellen Henke, Dresden

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The Classification of Finite Simple Groups is considered to be one of the most important results of modern mathematics, and has led to many applications both inside and outside group theory. The original proof was rather monumental, spread over hundreds of articles published over several decades, and several programmes have been developed to revise and streamline various parts of the proof. Some of these programmes have led into new areas not previously associated with simple groups.

One such is the theory of fusion systems, which although originating in topology and modular representation theory, has quite recently grown into a new field with the potential for very strong impact in finite group theory, and in particular on one of the programmes for a new proof of part of the classification of finite simple groups.

The workshop will focus on some of these programmes. Another theme will be applications of finite group theory to other areas, with a particular emphasis on longstanding conjectures in algebraic topology, algebraic graph theory, and random walks in Markov theory.