TOPOLOGY SEMINAR

Realizability and tameness of fusion systems

By

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Abstract: A saturated fusion system over a finite p-group S is a category whose objects are the subgroups of S and whose morphisms are injective homomorphisms between the subgroups satisfying certain axioms. A saturated fusion system F over S is realizable if there is a finite group G with Sylow p-subgroup S such that the morphisms in F are exactly those induced by conjugation in G. A normal fusion subsystem in F is centric in F if it contains its centralizer in F. I will describe recent work with Carles Broto, Jesper Møller, and Albert Ruiz, where we show among other results that a saturated fusion system F is realizable if there is a normal, realizable subsystem E in F that is centric in F. Another result is that every realizable fusion system F is tame; i.e., realizable by a finite group that has "just as many" automorphisms as F (to be made precise). Stated in such terms, these results depend on the classification of finite simple groups, but I will also give more precise statements formulated in such a way that their proofs are independent of the classification.

Date: Monday, May 6, 2024
Time: 13:30
Place: SA141 - Mathematics Seminar Room