Topology Seminar

Matthew Gelvin

of University of Copenhagen will be speaking on

Parametrization of characteristic bisets of a saturated fusion system

on February 25 at 4:30 in
MIT Room 2-131

For G a finite group with Sylow subgroup S, the conjugation action of G on the subgroups of S gives rise to the data of a *saturated fusion system* $\mathcal{F}_S(\mathcal{G})$ on S. On the other hand, S acts on G by left and right multiplication. The resulting (S, S)-biset ${}_SG_S$ turns out to contain much of the same information as $\mathcal{F}_S(\mathcal{G})$, in that the biset determines the fusion system, but not conversely.

These notions can be abstracted to make no reference to the ambient group G, resulting in an *abstract saturated fusion system* $\mathcal{F}$ on S and a *characteristic biset* Ω for $\mathcal{F}$. Again, Ω determines $\mathcal{F}$, but each $\mathcal{F}$ has many associated characteristic bisets.

This talk will focus on the failure of a saturated fusion system to uniquely determine a characteristic biset. We will show that there is a parametrization of all characteristic bisets for a fixed $\mathcal{F}$, which will have as a consequence the surprising result that each saturated fusion system has a unique *minimal* associated characteristic biset.