

# Topology Seminar

**David Ayala**

of Montana State University will be speaking on

## The Bruhat stratified orthogonal group acts on higher categories by adjoints

on October 16 at 4:30 in  
MIT Room 2-131

The majority of this talk will examine the Bruhat stratified orthogonal group:

- The Bruhat cells of the general linear group assemble as a combinatorial stratification of the orthogonal group.
- Compatibility of this stratification with matrix multiplication can be articulated as an associative algebra structure on its exit-path category in a certain \*Morita\* category of categories.
- Articulated as so, there is an action of this Bruhat stratified orthogonal group  $O(n)$  on the category of  $n$ -categories; this action is given by adjoining adjoints.
- This results in a continuous action of the topological group  $O(n)$  on the category of  $n$ -categories with adjoints.

The last point is a key input into a proof of the Cobordism Hypothesis using factorization homology – this context will be discussed.

This is joint work with John Francis.

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