

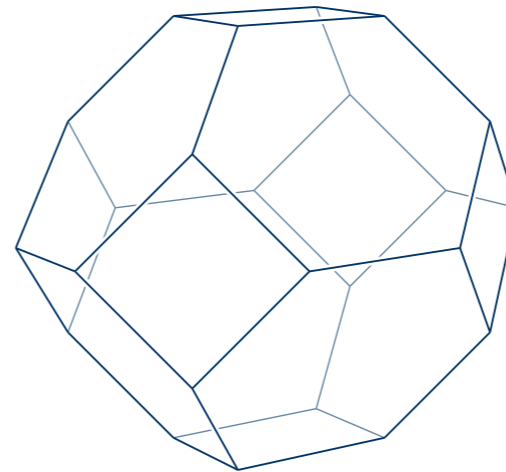
# Michigan Math Club



Thursday at 4pm in EH1360  
Pizza + pop outside afterwards!!

## Flows and Permutohedrons

Tony Bloch  
Department Chair



06 April 2023

In this talk we discuss some interesting results in linear algebra and their connection with dynamics. In particular I will discuss the *Schur-Horn theorem*, which relates the eigenvalues of Hermitian matrices to their diagonal entries, and how this is related to the theory of convex polytopes. I will also explain how it is a particular case of so-called momentum maps and how it relates some interesting dynamics -- in particular gradient and Hamiltonian flows. I will also discuss how this circle of ideas is connected to totally positive matrices -- matrices all of whose minors are positive. I will also make some general remarks on the connection of mathematics with the other sciences and the place of mathematics in the university.

