

## **Flow polytopes and the Kostant partition function**

Karola Meszaros, MIT/University of Michigan

This talk will examine several aspects of the connection between the Kostant partition function and the combinatorics of flows. First I will show how to use flows to establish Kostant partition function identities. Then I will describe joint work with Alejandro Morales generalizing an intriguing theorem of Stanley and Postnikov, which expresses the volume of a flow polytope as a Kostant partition function. Finally, I will present a method for constructing flow polytopes with combinatorial volumes, such as the number of  $r$ -ary trees on  $n$  internal vertices. Catalan numbers will also make an appearance.