1167-05-191 **Niklas Livchitz**, **Büşra Sert** and **Amy Wiebe*** (w.amy.math@gmail.com). *A combinatorial approach to Minkowski tensors of polytopes.*

Intrinsic volumes of a convex body provide scalar data (volume, surface area, Euler characteristic, etc.) about the geometry of a convex body independent of the ambient space. Minkowski tensors are the tensor-valued generalization of intrinsic volumes. They provide more complex geometric information about a convex body, such as its shape, orientation, and more.

Minkowski volume tensors are closely linked to the moments of the uniform distribution on a convex body, and a rational generating function for these moments allows us to extract the tensors symbolically. In this talk, we explain this connection and show that it can be extended to the setting of Minkowski "surface tensors". We demonstrate how this generating function approach allows us to give an explicit formula for these surface tensors in the case of simplicial polytopes.

No prior knowledge of Minkowski tensors will be assumed.

This is a joint work with Büşra Sert and Niklas Livchitz. (Received March 07, 2021)