

Nick Rozenblyum: **Algebro-geometric aspects of higher quantization**

A basic example of quantization is the ring of algebraic differential operators on a variety as a deformation of functions on the cotangent bundle. From a certain point of view, this is an example of one-dimensional quantization. I will describe, in geometric terms, higher (and lower) dimensional versions of such a construction. In the two dimensional case, the story is closely related to the theory of vertex algebras and has interesting representation theoretic applications. I will also describe some potential geometric applications of these ideas.