

## Convex and algebraic geometry

Our research seminar is devoted to the many connections between convex and algebraic geometry. This interaction has many important applications in various areas of mathematics: combinatorics, representation theory, mathematical physics to name a few. A classical and one of the most well-known examples is the combinatorial description of an important class of algebraic varieties - the so-called toric varieties - in terms of polytopes and fans (collections of cones). Yet another recent and up-to-date application is the theory of Newton-Okounkov bodies.

Participants will tell about recent papers that they find important on

[http://arxiv.org/find/grp\\_math/1/AND+cat:+math.AG+all:+polytope/o/1/o/all/o/1](http://arxiv.org/find/grp_math/1/AND+cat:+math.AG+all:+polytope/o/1/o/all/o/1) and

[http://arxiv.org/find/grp\\_math/1/AND+cat:+math.RT+all:+polytope/o/1/o/all/o/1](http://arxiv.org/find/grp_math/1/AND+cat:+math.RT+all:+polytope/o/1/o/all/o/1),

providing extensive background material for those less familiar with the subject.

Geometrically oriented 2<sup>nd</sup> year students and higher are welcome.