Andrei Jaikin: Group Theory and its applications to other parts of Mathematics.

The possible topics:

1. Fields of definition and moduli fields of dessins.

In this project we will apply the technique of profinite groups to study the arithmetic of dessins.

2. Expander graph.

In this work we will study one of many different techniques to construct expander graphs.

3. Dimension expanders.

In this work we will study a result of Bourgain to construct explicit dimension expanders.

4. Golod-Sh 5. Approximate groups.

This work is devoted to study the concept of approximate group introduced recently by T. Tao. afarevich group.

This work is devoted to study Golod-Shafarevich technique in group theory and algebra.

5. Approximate groups.

This work is devoted to study the concept of approximate group introduced recently by T. Tao.