

# Rational surfaces and transformation groups

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## Abstract:

The course is devoted to some aspects of the group of transformation of the complex projective plane, also known as the Cremona group. We will focus on finite subgroups of the Cremona group, and cover some topics among:

- Notion of (bi)rational map, linear system, blowup.
- Language of the minimal model program in the case of surfaces.
- Factorization into Sarkisov links, equivariant version with respect to a finite group action.
- Conic bundles and Del Pezzo surfaces: description of their  $(-1)$ -curves and finite groups of symmetries.
- Classification of involutions in the Cremona group.

## Prerequisites:

Basic course “Introduction to complex algebraic surfaces”

## Reference:

S. Lamy, *The Cremona Group, Book in preparation*.