INTRODUCTION TO COMPLEX ALGEBRAIC SURFACES

ENRICA FLORIS

In this course, we will study complex algebraic surfaces.

- In the first part of the course, we will introduce affine and projective varieties. Divisors on varieties and morphism associated to divisors will be introduced. We will give the definition of tangent bundle and canonical divisor.
- We will then focus on algebraic surfaces, define the intersection product of curves and prove some fundamental properties.
- In the last part of the course we will prove the Castelnuovo theorem and give the general framework for the classification of algebraic surfaces.

Prerequisites

There is no strict requirement on the prerequisites. Nonetheless, attendance of (some of) the following M1 courses is strongly recommended: Analyse complexe, Géométrie Différentielle, Géométrie et Algèbre, Topologie et Algèbre.

References

- A. Beauville, Complex algebraic surfaces, Cambridge University Press
- W. Barth, K. Hulek, Chris Peters, A.van de Ven, Compact Complex Surfaces, Springer
- R. Hartshorne, Algebraic Geometry, Springer
- C. Voisin, Hodge theory I, Cambridge University Press