General introduction to K3 surfaces

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Abstract

In this talk, we will try to understand the topological and algebraic structure of K3 surfaces. We will begin our discussion with the definition of these surfaces. We need to understand what some of the objects we use in the definition are. So, first we need to understand what canonical class and canonical bundle/sheaf are. Then we'll try to understand the other requirement of the definition, sheaf cohomology. We will examine examples from these areas as time permits. Finally, we will take another look at the definition of K3 surfaces and examine some K3 surfaces.

References

[1] Lectures on K3 surfaces, Daniel Huybrechts

[2] Class Notes "Algebraic Geometry", Version of 2002/03, Andreas Gathmann (especially Chapter 8)