

***K3* surfaces and their automorphisms groups**

Yulieth Prieto¹ and Alessandra Sarti²

K3 surfaces are important algebraic surfaces due to their remarkable properties. The name was given by A. Weil in 1958 in honour of the mountain K2 in Kashmir and the three renowned mathematicians Kummer, Kähler, and Kodaira. The aim of these lectures is to introduce the basic definitions and properties of *K3* surfaces, while also providing many examples. In particular, we will consider quartic surfaces, complete intersections, Kummer surfaces, and elliptic fibrations. We will also discuss the role of their automorphisms group, which is a fundamental tool for understanding their geometry. Furthermore, we will study *K3* surfaces endowed with an elliptic fibration and an automorphism acting on it, present some general results, and give several applications.

¹Pontificia Universidad Católica de Chile

²Université de Poitiers