Tuesday 26 September 2023 – at 12.00 am
Department of Mathematics
Seminar Room 1
The event will take place in presence and online through the ZOOM platform.
To get the access codes please contact the secretary office

Federico Fallucca

PhD Student in Mathematics

On the degree of the canonical map of surfaces of general type

Abstract:

A classic approach in Algebraic Geometry to study smooth algebraic varieties is through maps to projective spaces given by sections of line bundles. The canonical bundle defines the so-called canonical map, which is been amply studied in the literature. One of the main topics of my PhD thesis regards some of the (several) open problems on the degree of canonical map of a surface of general type. During the talk, I am going to remind the state of the art on open problems and show one of the main results that I have given in this direction:

There exist surfaces of general type with a canonical map of degree 10,11,13,14,15, and 18.

In particular, I am going to describe in a self-contained way the examples of surfaces having a degree of the canonical map 10, 11, and 14 obtained in collaboration with Dr. C. Gleissner. After that, I am going to show how all these examples are obtained and what is the theory behind them: we systematically constructed product-quotient surfaces of general type and we have studied their canonical map. Hence the rest of the talk gives an overview of the main improvement of the construction of product-quotient surfaces given in the thesis and the theory that we have developed to study the degree of their canonical map.

Supervisors: Pignatelli Roberto – Bauer Ingrid