



Cycle 29th ORAL DEFENCE OF THE PHD THESIS

Friday 21 July 2017 at 15:00

Seminar Room “-1” – Department of Mathematics

Nicola Cancian

On Semi-isogenous Mixed Surfaces

Abstract

Let C be a compact Riemann surface. Let us consider a finite group acting on $C \times C$, having some elements that exchange the factors, and assume that the subgroup of those elements that do not exchange the factors acts freely. We call the quotient a Semi-isogenous Mixed Surface. In the talk we investigate these surfaces and we explain how their geometry is encoded in the group. Based on this, we present an algorithm to classify the Semi-isogenous Mixed Surfaces with given geometric genus, irregularity and self-intersection of the canonical class. In particular we give the classification of Semi-isogenous Mixed Surfaces with $K^2 > 0$ and $\chi = 1$, where new examples of minimal surfaces of general type appear.

Finally, we discuss minimality of Semi-isogenous Mixed Surfaces, studying their bicanonical system: we prove that we can relate the dimension of its first cohomology group to the rank of a linear map that involves only curves.

Contact person:
Roberto Pignatelli