UNIVERSITÀ DI TRENTO
Dipartimento di Matematica

DOTTORATO

CYCLE 36th
ORAL DEFENCE OF THE PHD THESIS

Monday 29th January 2024 – at 10.00 am
Department of Mathematics
Room A208 – Povo 1
The event will take place in presence and online through the ZOOM platform.
To get the access codes please contact the secretary office

Lorenzo Barban

PhD Student in Mathematics

Geometric realizations of birational maps

Abstract:
In this presentation we highlight the relation between algebraic torus actions and birational geometry. Such a connection was first noticed by M. Reid, M. Thaddeus and J. Wlodarczyk, and in recent years G. Occhetta, E. A. Romano, L. E. Solà Conde and J. Wisniewski have used it to prove some statements in the direction of the LeBrun-Salamon conjecture.

In this talk we describe the results obtained by the Ph.D. candidate in this research area. On one hand, given a C*-action on a polarized pair, we study the local -analytic- geometry of the birational map in the cases where the criticality of the action is small enough, or for varieties which are constructed upon manifolds with two projective bundle structures.

On the other, given a small modification among normal projective varieties, we explain the construction of a projective equivariant compactification of such map, that is a normal projective variety, endowed with a C*-action, whose induced map among the geometric quotients coincides with the starting one.

Supervisors: Luis Eduardo Solà Conde – Eleonora Anna Romano