



UNIVERSITÀ  
DI TRENTO

Dipartimento di  
Matematica

# DOTTORATO



CYCLE 34th  
ORAL DEFENCE OF THE PHD THESIS

**Thursday 7 April 2022 – at 9:30 am**  
**Seminar room “-1”**

The event will take place online through the ZOOM platform.  
To get the access codes please contact the secretary office

## Mattia Vedovato

PhD Student in Mathematics

### Some variational and geometric problems on metric measure spaces

**Abstract:**

In this final presentation of my thesis, we will take a glance at two problems in calculus of variations over different metric measure spaces. To start with, we will see an instance of Bernstein's problem in the first Heisenberg group: we will introduce a condition under which stable solutions to the Weak Minimal Surface Equation in  $H^1$  are forced to be vertical planes. In the second part, we will switch to the context of  $RCD(K,N)$  spaces and explain how Talenti's comparison theorem extends therein: namely, when dealing with an elliptic boundary problem, we will see how the symmetrization of a solution compares with the solution of a suitably symmetrized problem.

**Supervisor:** Francesco Serra Cassano

**CONTATTI**

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