



**POLITECNICO  
DI TORINO**



Dipartimento di  
Scienze Matematiche  
G. L. Lagrange

**ECCELLENZA 2018 • 2022**

**Seminario  
on-line**

Tuesday **June 09, 2020** at 17:00

Hosted on: **Zoom**

**Matteo LEVI**

Postdoctoral fellow at Politecnico di Torino

## **The Dirichlet Problem On Infinite Trees**

Prof. Vallarino introduces the seminar.

### **Abstract**

Trees in analysis are both a fruitful model for continuous problems and an interesting metric space per se.

In this talk, Dr. Levi will consider the Dirichlet problem on a locally finite tree of infinite depth, with no combinatorial restrictions, and he will prove that the set of irregular points for continuous boundary data has zero capacity. He will also give some uniqueness results for solutions in Sobolev  $W^{1,p}$  of the tree.

The talk is based on a joint work with Nikolaos Chalmoukis.

### **Biography**

Matteo Levi is a PostDoctoral Fellow at DISMA since March 2020, working with prof. Maria Vallarino. Graduated at Università degli Studi di Milano, he obtained his PhD title in December 2019, from Università di Bologna and Universitat Autònoma de Barcelona. Funded by the European grant H2020-MSCA-RISE-2017, in October and November 2019 he was visiting Johns Hopkins University (Baltimore), where he later got an Assistant Research Scholar position for the next months until the end of February 2020. His research interests lie, on the one hand, in Complex and Harmonic Analysis, with special focus on discrete settings for the latter, while on the other in the use of both Harmonic Analysis and Optimal Transport techniques for applications in Data Analysis and Machine Learning.