ALESSANDRO BORRE

PERSONAL DETAILS

Date of Birth
Home Address
Telephone
Email

EDUCATION

Università degli Studi di Genova **Genoa, IT**
PhD Program in Security, Risk and Vulnerability **Nov 2021-*Nov 2024***
- Curricula: Risk, Climate Change and Sustainable Development
- PhD in collaboration with CIMA Research Foundation, in Savona
- Coursework: Risk Management, Machine Learning, Risk Assessment, Network Analysis, Flood Hazard Analysis

Politecnico di Torino **Turin, IT**
M.S. in Environmental and Land Engineering - Natural Hazards and Civil Protection **Sep 2018-Mar 2021**
- Coursework: Operative Hydrology, Remote Sensing, Territorial Protection from Hydraulic Risks • Final Grade: 108/110
- Final Thesis: Metodologie per la caratterizzazione di eventi idrologici spazialmente distribuiti

Politecnico di Torino **Turin, IT**
B.S. in Environmental and Land Engineering **Sep 2015-Nov 2018**
- Coursework: Topography, Applied Geology, Hydraulics, Geophysics, Structural Mechanics
- Final Grade: 89/110
- Final Thesis: Analisi geochimica delle Risorse idriche sotterranee in Piemonte

PROFESSIONAL EXPERIENCES

CIMA Research Foundation **Savona, IT**
Risk Assessment and Damage Data Intern **May 2021-Nov 2021**
- Observed and analyzed long-term pluvial data for insurance project in North-East Italy.
- Coordinated the preparation of a scientific paper on the theme of the selection process of flood events according to their spatial distribution in Italy.
- Improved communication skills in a team and adapted to independent work in smart-working mode.

CIMA Research Foundation **Savona, IT Hydraulic Intern** **Jul 2020-Nov 2020**
- Implemented and analyzed new run of data to map the entire national network of hydrologic stations.
- Researched a comprehensive list of past flood events across national territory to perform models' comparisons.
- Leveraged teamwork skills in the Hydraulic & Hydrology and Risk Management departments to meet deadlines.

Expo 2015 **Milan, IT**
Costumer Relations Assistant **Oct 2015-Nov 2015**
- Learned to deal with a diversity of people in a multicultural environment as of the Expo.
- Coordinated daily agendas to ensure a smooth experience to Expo visitors.
- Managed a team of 4 to assure the correct running of entrance traffic.

Engineering Firm Raniero Cosattini **Turin, IT Thermoregulation Systems Intern** **Jun 2014-Jul 2014**
- Designed the implementation of new thermoregulation installations in private buildings.
- Assured ideal comfort conditions in corporate environment with AutoCAD tool.

SKILLS

Coding: Matlab, R, Python, C.

Software Tools: AutoCAD, QGIS, HEC-RAS, Office Suite, Adobe Illustrator, VNC, ECDL Patent.

Languages: Italian (Native), English (Proficient – FIRST B2), French (Intermediate – DELF B2).

Certification: Entitlement provided by art. 98 paragraph 4 of D. Lgs. 81/2008 on security in the construction sites, provided by Politecnico di Torino in March 2021.

INTERESTS & ACTIVITIES

Scientific Author: Co-author of an abstract accepted and published by EGU General Assembly 2021: "Identification of meteo-hydrological extreme events at the regional scale: the Northwestern Italy case study", Matteo Pesce et al..

Private Tutoring: Tutored private students at a university and high school level on scientific subjects for 8 years.

Football: Capitan of the team in a competitive regional level for A.S.D. Polisportiva Rapid Torino for 5 years. **Ski:** Performed in an agonistic ski club and attended several ski races for Sci Club Aosta in the Alps.

ABSTRACT MASTER THESIS

Abstract. The evaluation of extreme flood events in the past years is key in informing hydrological studies due to the powerful socioeconomic impacts that these events have caused. The univariate approach of the problem, based on the analysis of local flood frequency on a single site, could represent an important limitation. For this reason, in the recent past, more and more researches have been focusing on the regional characterization of the problem, trying to characterize not only the temporal distribution of events, but also their spatial one. The main objective of this thesis is the comparison of three different methods for the selection and the characterization of spatially distributed flood events that have occurred in Italy. The three methods considered here have been applied by Prof. Alberto Viglione, Doc. Manuela Brunner, and CIMA Foundation in different regions and periods and have not been compared on a consistent database before. For the application of these three methods, both observed and modeled discharge data have been used, to have a complete and homogeneous view of the problem. First, a list of extreme flood events that have affected the Italian territory in the time interval 2005-2019 involving simultaneously more areas is extracted from the database. These events are then ranked based on indices provided by each of the three methods to easy the comparison among them. The methods have been compared in terms of their technical analogies and differences, the values of the parameters used, and the results obtained. The most significant differences are observed in the different computation of the local empirical flow return times and the different use of filters and thresholds for the identification and characterization of the events. The methodologies of Prof. Viglione and the CIMA Foundation show similar results, comparable with the list of extreme flood events that have affected the Italian territory, while Doc. Brunner's method seems less consistent, with a different selection of flood events. The results show that contemporary extreme events on multiple basins are distributed in a nonhomogeneous way on the national territory: it should be noted that the presence of a higher number of events in the North and Central Italy is to be expected because the largest Italian basins, as Po, Adige, Arno, and Tevere are located there. The temporal frequency analysis of these extremes seems to confirm a progressive rise in the magnitude of flood events due to climate change and other human factors.

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