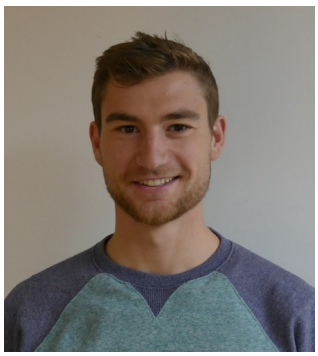

Mathieu LUCAS (2019-2023)
Historical reanalysis of Rhône flows at Beaucaire: extreme floods and climatic variability of flows
Supervisor: M. Lang (RiverLy, Hydrology team), J. Le Coz (RiverLy, River Hydraulics team), B. Renard (RECOVER)
Doctoral School : MEGA (Mécanique Energétique, Génie Civil et Acoustique), Lyon

A first step will be related to the analysis of the variability of the Rhône regime during the period 1816-2019, in connection with the climatic variability, hydraulic works on the Rhône river and major changes on the watershed. Then, the reconstitution of the flow and associated uncertainties of the Rhône river at Beaucaire will be done, using a hydraulic model and historical geometries. It will be based on records of hydro-climatic events from 1300 to today on the lower Rhône from the HISTRHÔNE project. Finally, a flood frequency analysis will be developed, considering a mixed sample issued from a continuous series (1806-2019) and a set of hydrological events (period 1300-1800).