



# Luca Salerno

Engineer - PhD Student

- 01 August 1991
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## PhD project

The focus of the project is on the capability of rivers to foster carbon sequestration, through a physically-based eco-geomorphological approach. Rivers represent delicate systems which exhibit a plethora of processes from geomorphology, ecology, hydraulics, engineering and social sciences. A key open question of carbon cycle science is whether burial in inland waters represents a net increase in carbon sequestration rather than simply a translocation of a sink that would otherwise have occurred on land or, eventually, in the oceans. We addressed the capability of river systems to behave as catalysts for the net primary production in riparian environments, where carbon is sequestered during low flow periods and it is stored through plant removal during flooding.

## Skills

Time management

Creativity

Computer and analytical modeling

Verbal and written communication

Attention to detail

## Education

- 2018-Today PhD (student) Politecnico di Torino  
Department of Environment, Land and Infrastructure Engineering  
*Project: Rivers as catalysts of carbon sequestration*
- 2014-2017 Master's Degree Politecnico di Torino  
Civil-Hydraulic Engineering  
*Thesis Topic: Study of Taylor-Aris dispersion in a straight tube with annular section for time-dependent flow*
- 2010-2014 Bachelor's Degree cum laude Università degli studi di Catania  
Civil and Environmental Engineering  
*Thesis Topic: Analytical studies of unsteady flow in the penstocks of hydroelectric power stations*
- 2005-2010 High school Liceo Scientifico O.M. Corbino -Siracusa  
Specialized in mathematics and physics.

## Publications

- 2020 Salerno, L., Cardillo, G., Camporeale, C. (2020). Aris-Taylor dispersion in the subarachnoid space. *Physical Review Fluids*, 5(4), 043102.

## Conferences

- 2020 EGU 2020: Biogeomorphology/Ecogeomorphology  
Salerno, L., Bassani, F., Camporeale, C.. Carbon sequestration in tropical meandering rivers.
- 2018 19<sup>th</sup> Biennial Seminar on Water Resources and Environmental Management  
Edinburgh  
Salerno, L., Zen, S., Vezza, P., Perona, P. and Camporeale, C. .Assessing river carbon stock capacity from remote sensing data.

## Experience

- 2018-Today Teaching Assistant Politecnico di Torino  
Teaching Assistant for undergraduate course of "Hydraulics" and for master course of "Fluvial Hydraulics"
- Jan-May 2018 Research Grant Politecnico di Torino  
Ecohydraulics.
- Jun-Aug 2017 Research Grant Politecnico di Torino  
Study of the role of the pulsatile cerebral pressure on the diffusion of drugs in subarachnoid cavity.
- Oct-Nov 2016 Univeristy Internship Program Politecnico di Torino and Torino Metropoli  
Study of the interactions between water pipelines and road infrastructures .

## Languages

- English Intermediate level
- Italian Native language

## Skills and competences

- Very good command of GIS program and satellite images elaboration (ArcGIS, Q-GIS and Google Earth Engine platform)
- Very good command of Math program (Wolfram Mathematica and Matlab)
- Very good command of OS and Microsoft Office and iWork tools
- Very good command of CAD Program (AutoCAD)
- Apr pilot license
- Good command of LaTeX
- Other program:Hec-Ras, Epanet, Dolmen.