

PhD UME, a.y. 2018-2019

Course: Methods for global scale flood risk assessment

Lecturer: Dr. Francesco Dottori

Date: 26/11/2018 – 27/11/2018

Classroom: 1-15 @ IUSS

Course schedule

Week	Date	Lecture hours	Subject	Tot h
1	26/11/2018	11:00-13:00	Introduction to global scale flood risk assessment	2
	26/11/2018	14:00-18:00	Description of global flood hazard and risk models Global datasets for flood risk analysis	4
	27/11/2018	9:00-13:00	Exercise: application of global models and datasets for risk analysis and emergency support	4

Course Description

The course will give an overview of the present state of the art of global scale flood risk assessment. The first part of the course will provide an introduction to the motivations and challenges associated with modelling flood risk at continental and global scales. The second part will present a number of existing global datasets and modelling frameworks, describing how hazard, vulnerability and exposure components are evaluated to evaluate flood risk. Moreover, specific applications of global models for emergency support, risk analysis and climate change assessment will be described. The course will include an exercise to familiarise the students with global tools and data for flood risk analysis.

References

- Beven, K. J. (2011). *Rainfall-runoff modelling: the primer*. John Wiley & Sons.
- Dottori, F., et al. (2018). Increased human and economic losses from river flooding with anthropogenic warming. *Nature Climate Change*, 8(9), 781.
- Schumann G.J-P., Bates P.D., Apel H., Aronica G.T. (2018) *Global Flood Hazard: Applications in Modeling, Mapping and Forecasting*. AGU - John Wiley & Sons.
- Trigg, M. A., et al. (2016). *The credibility challenge for global fluvial flood risk analysis*. *Environmental Research Letters*, 11.9: 094014.
- Ward, Philip J., et al. (2015) *Usefulness and limitations of global flood risk models*. *Nature Climate Change* 5.8: 712.