Dr. Angelica Tarpanelli

Research Institute for Geo-Hydrological
Protection, National Research Council
(IRPI-CNR)
Via Madonna Alta 126, 06128 Perugia, Italy
http://hydrology.irpi.cnr.it/people/angelica-tarpanelli/

Background

Angelica Tarpanelli received her M.S. degree in Civil Engineering with excellence from the University of Perugia in Italy in April 2006. In September 2006, she received a Scholarship and successively a Research Fellowship to carry out research at the Research Institute of Geo-Hydrological Protection (IRPI) of the National Research Council (CNR) in Perugia under the project titled "Hydrological Monitoring of Extreme Events". Since September 2012 she has been a Researcher at CNR-IRPI. In January 2014 she received her PhD in Hydraulic Engineering at University of Perugia. The title of her thesis is "Remote Sensing for Hydraulic Applications in Small-Medium Basins".

The research interests mainly regard:

- watershed hydrology with a focus on hydrological and hydraulic processes for coping with flooding risks;
- design flood estimation for water management and flood hazard assessment;
- analysis of climate change effects on flood frequency;
- stochastic generation of spatially distributed rainfall;
- the estimation of river discharge from altimetry and optical sensors also for ungauged areas;
- assimilation of soil moisture observations into rainfall-runoff modelling.

These topics are the basis of the current research activity on which she published original contributions in peer-reviewed journals. She is a member of Italian Hydrology Society (SII), Italian Group of Hydraulics (GII) and European Geophysical Union (EGU).

Activities in education

Angelica Tarpanelli supervised national and international master students and she was involved in tutorial activities consisting in supporting students in didactic integrating activities. She has been a lecturer at ESA's Advanced Training Course in Land Remote Sensing in 2017.

Recent projects

- COMMONS - Land cover change detection and monitoring methodologies based on the combined use of Sentinel-1 and Sentinel-2 imagery for natural resources and hazard management (European Space Agency) [2014-2017]. Role: Co-Investigator.
- WACMOS Irrigation - Water Cycle Multi-mission Observation Strategy for the Irrigation (European Space Agency) [2017 - ongoing]. Role: Principal Investigator.
- Algorithm development to estimate discharge using multisource remote sensing data and its application in Nigeria and India (International Water Management Institute) [2015] Role: Principal Investigator.
- Water resources and flood risk service for Umbria Region, Italy [2007-2015]. Role: Principal Investigator.

Selected publications

- Tarpanelli A., Amarnath G., Brocca L., Massari C., Moramarco T. (2017). Discharge estimation and forecasting by MODIS and altimetry data in Niger-Benue River. *Remote Sensing of Environment*, 195, 96-106. http://dx.doi.org/10.1016/j.rse.2017.04.015
- Tourian M.J., Tarpanelli A., Elmi O., Qin T., Brocca L., Moramarco T., Sneeuw N. (2016) Spatiotemporal densification of river water level time series by multimission satellite altimetry. *Water Resources Research*, 52. http://dx.doi.org/10.1002/2015WR017654
- Domeneghetti A., Castellarin A., Tarpanelli A., Moramarco T. (2015) Investigating the uncertainty of satellite altimetry products for hydrodynamic modelling. *Hydrological Processes*, 29(23), 4908-4918. http://dx.doi.org/10.1002/hyp.10507
- Tarpanelli A., Brocca L., Barbetta S., Faruolo M., Lacava T., Moramarco T. (2015) Coupling MODIS and radar altimetry data for discharge estimation in poorly gauged river basin. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 8(1), 141-148. http://dx.doi.org/10.1109/JSTARS.2014.2320582

- Tarpanelli A., Barbetta S., Brocca L., Moramarco T. (2013) River discharge estimation by using altimetry data and simplified flood routing modeling. *Remote Sensing*, 5(9), 4145-4162. http://dx.doi.org/10.3390/rs5094145