

24
2018

NOON TALK @ DIATI

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Please bring
your own mug.
Coffee and tea
will be
provided
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**Martedì 24 aprile 2018
ore 13.00**

**Politecnico di Torino
Sala Riunioni, primo piano,
DIATI ingresso 3**

Margaret Shanafield

DECRA Fellow Chief Investigator
College of Science and Engineering
Flinders University

“Understanding the Hydrology of Temporary Rivers”

Prof. Stefano Lo Russo moderates the discussion

ABSTRACT

When we look at a global map of our earth's river network, it seems like the fingers of blue lines densely cover our continents. However, what that map doesn't show is that close to half of those rivers don't have water in them for some or most of the year - they are what we call “temporary” (or “intermittent”) rivers. Because these temporary rivers have more complex and unpredictable hydrology and can be difficult to get to, relatively little is known about how they function. But, they are a critical freshwater resource, both as a water source at the surface and as drivers of groundwater replenishment.

Typical of arid regions, a majority of Australian rivers are temporary. This provides unique challenges for quantifying streambed fluxes, since many common techniques are not suitable. At the same time, streambed recharge often provides the primary mechanism for aquifer recharge in such arid basins, highlighting the need for such measurements. Recent field experiments in central Australia highlight contrasting results using various methods, as well as the role of differentiating transmission losses, infiltration, and aquifer recharge in an intermittent river. In this presentation, background on the importance, functioning, and research challenges of temporary stream hydrology will be presented and exemplified through recent research outcomes.



**POLITECNICO
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Dipartimento di Ingegneria
dell'Ambiente, del Territorio
e delle Infrastrutture



BIOGRAPHY

Dr Margaret Shanafield's research is at the nexus between hydrology and hydrogeology. Current research interests focus on surface water-groundwater actions, as well as diverse projects that encompass international development through to fibre optics and ecohydrology. Her main passions are the use of multiple tracers to understand groundwater recharge patterns in streambeds, and understanding the dynamics of intermittent and ephemeral streamflow. A lover of arid environments, Margaret completed a PhD in Hydrogeology at the University of Nevada Reno (with the Desert Research Institute) in 2010, then moved to Flinders University in Adelaide, South Australia (in the driest state on the driest continent), where she has been ever since. In 2015, Margaret was awarded a prestigious Australian Research Council DECRA grant to measure and model what hydrologic factors lead to streamflow in arid regions.

Save the date for our next speaker-event, on **Tuesday June 5th 2018**, at 13:00.