

# Vienna Catchment Science Symposium, Saturday 18<sup>th</sup> April, 2015

## On the Theme of: Forensic hydrology

The aim of the 2015 Symposium was to demonstrate the role of a forensic approach for understanding how river and groundwater systems function. The forensic approach encourages hydrologists to collect, examine and combine clues left by past events and processes and then use deductive reasoning to determine how they took place. This is in contrast to the calibration approach where processes and events are first conceptualised and then parameters are calibrated to fit model results to measured observations. During the symposium, we heard from three speakers who apply a deductive (forensic) approach to their research. Marco Borga spoke about how deductive reasoning can be used to understand hydrological and societal responses to flash floods. Andreas Farnleitner discussed how nucleic acid analysis can be used to trace the source of fecal DNA in groundwater and so determine pollution risks. While Harihar Rajaram presented some ideas from ongoing research on subsurface processes that contribute to widespread “signature observations” or “clues” of a geochemical or biogeochemical nature, and how they can be explained.

<u>Time</u>	<u>Session</u>	<u>Location</u>
8:30	Tea, coffee, pastries and greetings	3 <sup>rd</sup> Floor Foyer
<b>8:45</b>	<b>Welcome and Introduction</b> Günter Blöschl, Vienna University of Technology, Austria	Kuppelsaal
<b>9:00</b>	<b>Hydrological and societal response to flood producing rainstorms: the potential of forensic methods</b> Marco Borga, University of Padova, Italy	Kuppelsaal
10:15	Tea and coffee	3 <sup>rd</sup> Floor Foyer
<b>10:45</b>	<b>Using genetic information from microbes to reveal the origin of fecal pollution in ground water</b> Andreas Farnleitner, Vienna University of Technology, Austria	Kuppelsaal
11:55	Short break	
<b>12:00</b>	<b>Detecting weathering processes and hydrochemical response to climate change</b> Harihar Rajaram, University of Colorado, USA	Kuppelsaal
13:15	Lunch	3 <sup>rd</sup> Floor Foyer
<b>14:15</b>	<b>Small group discussion sessions</b> Group 1: <i>Forensic hydrology for flood analysis</i> Aim: to brainstorm hydrological clues and how they can be combined for understanding flood systems Moderator: Marco Borga Group 2: <i>Forensic hydrology for groundwater analysis</i> Aim: to brainstorm hydrological clues and how they can be combined for understanding groundwater systems. Moderator: Harihar Rajaram	Kuppelsaal          Seminarraum Kuppelsaal (follow signs)
16:00	Tea and coffee	3 <sup>rd</sup> Floor Foyer
<b>16:30</b>	<b>Plenum: Exchange of group findings</b>	Kuppelsaal
18:00	Evening drinks reception followed by dinner	3 <sup>rd</sup> Floor Foyer

