

CONNECTEUR: COST ACTION ES 1306

Joint Training School: WG2 & WG4

SEDIMENT AND WATER CONNECTIVITY IN MOUNTAIN DRAINAGE BASINS

25-29 July 2016

Laas/Lasa, Province of Bolzano, Italy

Organizing Committee: Francesco Brardinoni (Bologna), Tobias Heckmann (Eichstätt), Ronald Poepl (Vienna), Marco Cavalli (Padova) & Damia Vericat (Lleida)

GENERAL INFORMATION

AUDIENCE: PhD students and prospective PhD students

Maximum number of attendees: 20

AIMS: foundations and practical tools for evaluating connectivity in mountain environments

CONTENT: keynotes, workshops, problem solving and field visits

PROGRAMME

MONDAY 25 JULY

MORNING

INTRODUCING THE SCHOOL, THE GEOLOGICAL AND THE GEOMORPHOLOGICAL SETTING

9:00 – 9:30 Introduction to the training school (all the trainers)

9:30 – 10:00 Keynote 1: Geological and Quaternary history of Vinschgau (Volkmar Mair, Geological Survey of Bolzano)

10:00 – 10:30 Keynote 2: Water and sediment management in Vinschgau (Pierpaolo Macconi, Autonomous Province of Bolzano)

+++ Coffee break +++

MASS WASTING PROCESSES

10:45 – 11:30 Keynote 3: The Vinschgau cluster of paraglacial fans: Quaternary-inherited connectivity (Vincenzo Picotti, ETH Zurich)

11:30 – 12:15 Keynote 4: Landslides, landslide dams, and connectivity (Ivanna Penna & Reginald Hermanns, NGU Trondheim)

+++ Lunch break +++

AFTERNOON

14:00 – 14:45 Keynote 5: Debris flows/floods, structural countermeasures, and sediment connectivity (Johannes Hubl, BOKU, Vienna)

14:45 – 16:45 Students present their PhD projects concerned with connectivity (part 1)

(12 minutes presentation + 3 minutes questions)

17:15 – 18:45: Field visit 1: the Rio Gadria debris-flow catchment

TUESDAY 26 JULY

MORNING

TRACING WATER AND SEDIMENT

9:00 – 9:45 Keynote 6: Tracing hydrologic connectivity in snowmelt and glacier-fed streams (Daniele Penna, University of Firenze)

9:45 – 10:30 Keynote 7: Tracing sediment and wood connectivity in forested streams (Francesco Comiti, University of Bolzano)

+++ Coffee break +++

10:45 – 11:30 Keynote 8: Provenance analysis: tracing minerals in river sands (Giovanni Vezzoli, University of Milano-Bicocca)

11:30 – 12:30 Students present their PhD projects concerned with connectivity (part 2)

(12 minutes presentation + 3 minutes questions)

+++ Lunch break +++

AFTERNOON

14:00 – 16:00 Students present their PhD projects concerned with connectivity (part 3)

(12 minutes presentation + 3 minutes questions)

+++ Coffee break +++

Field Visit 2: visit to the Ponte Stelvio and Tre Fontane study sites

WEDNESDAY 27 JULY

HANDS ON TECHNIQUES: GEOMORPHOLOGICAL MAPPING & CONNECTIVITY

Each session has a 30-minute intro and a follow-up exercise

MORNING

9:00 – 10:30 Workshop 1: Mapping of sediment sources and colluvial source-to-sink pathways (Francesco Brardinoni)

+++ Coffee break +++

10:45 – 12:15 Workshop 2a: IC index and applications in selected basins of Vinschgau
(Marco Cavalli, CNR-IRPI)

+++ Lunch break +++

AFTERNOON

14:00 – 15:30 Workshop 2b: Combining sediment sources and the IC index
(Francesco Brardinoni & Marco Cavalli)

+++ Coffee break +++

Field Visit 3: Field visits for checking sediment sources and connectivity patterns
(based on the above exercises)

THURSDAY 28 JULY

HANDS ON TECHNIQUES: CONNECTIVITY AND TOPOGRAPHIC CHANGE DETECTION

MORNING

Workshop 3: Topographic change detection (DEMs, uncertainties, error propagation into DoDs)
(Heckmann, Vericat, Poepl).

AFTERNOON

Workshop 4: Inferring connectivity by integrating the outcomes of the previous workshops (aerial
photographs, sediment sources, IC maps, DoDs) (all trainers).

FRIDAY 29 JULY

MORNING

Problem solving (part 1): Thinking and designing before executing: presentation of potential Case Studies.
Each case study will tackle a specific environmental problem. The students will chose one (by groups of 2-3)
and they need to think about how they would address the problem based on what they have learnt at the
training school. Students will then present a workflow explaining the experimental design they would
follow to get the data required and solve the problem. Optionally, the participants can propose their own
working case studies based on their PhD research questions.

AFTERNOON

Problem solving (part 2): presentation of the results by groups.

Training School wrap up.