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DICAr
DIPARTIMENTO DI INGEGNERIA CIVILE E ARCHITETTURA

Quali-quantitative measurements, sampling and monitoring in lowland water courses

Pavia, 15-17 September 2025

Summer School for Ph.D. students and young researchers supported by the DORIAN Project: Action 3

Venue: Aula Ricciardi, Department of Civil Engineering and Architecture, via Ferrata 3, Pavia

Organizing committee

Prof. Stefano Sibilla
Prof. Arianna Callegari
Prof. Andrea Fenocchi
Prof. Gabriella Petaccia
Dr. Elisabetta Persi
Dr. Diego Ravazzolo
Dr. Nicolò Pella
Dr. Riccardo Tinivella

Summer School Schedule

Monday, September 15th: Expert seminars

Tuesday, September 16th: Field visit to Naviglio Pavese and Navigliaccio channels with demonstrations of hydraulic measurements and water sampling + expert seminars

Monday, September 17th: Expert seminars + demonstrations of laboratory analyses

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LabTA2
Tecnologie Avanzate per l'Ambiente

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Dipartimento di Scienze della Terra e dell'Ambiente

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Attendance to the entire summer school will award **4 CFU (ECTS)** to Ph.D. students

Info and registration:
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The surface water network of the Po River plain is subject to manifold environmental pressures. In urban areas, sewer networks convey wastewater to treatment plants. However, during heavy rainfalls the capacity of both sewer pipes and treatment plants is saturated, activating sewer overflows, directly conveying wastewater and contaminated runoff from urban soils to open channels and rivers. Nutrients, organic matter, traditional (hydrocarbons, heavy metals, etc.) and emerging pollutants (medicines, synthetic fragrances, etc.), can thus reach the surface water network. Sewer failures, as well as unauthorized sewage releases, can cause direct pollution to the surface water network even during dry periods. On the other hand, fertilizers and pesticides from intensive agriculture, together with sewage and medicines from breeding farms, contribute to surface water network pollution, either through the drainage network or sub-surface runoff. Within the context of climate change, extreme rain events increase peak sewer discharges, whereas extended drought periods boost pollutant retention and accumulation in soils and sewer pipes, leading to higher release rates in the ensuing rainfall events. Furthermore, invasive alien species introduced by human activities can impact on biodiversity and ecosystem functioning. Understanding the pollution dynamics of the Po River plain surface water network requires the interplay between multiple disciplines: hydraulics, environmental science, chemistry, ecology and microbiology.

The Action 3 Group of the DORIAN Project proposes a Summer School to widen your understanding on surface water pollution sources and dynamics, with a special focus on measurements, sampling and monitoring. Besides attending expert seminars on these topics, you will take part in field activities and attend laboratory analyses, understanding how a joint approach is essential to better support water resource management.

Scientific Committee

Prof. Stefano Sibilla, DICAr University of Pavia
Prof. Arianna Callegari, DICAr University of Pavia
Prof. Andrea Fenocchi, DICAr University of Pavia
Prof. Gabriella Petaccia, DICAr University of Pavia
Dr. Elisabetta Persi, DICAr University of Pavia
Dr. Diego Ravazzolo, DICAr University of Pavia
Dr. Nicolò Pella, DICAr University of Pavia
Dr. Riccardo Tinivella DICAr University of Pavia
Prof. Agnese Marchini, DSTA University of Pavia
Dr. Daniele Paganelli, DSTA University of Pavia
Dr. Diego Copetti, CNR-IRSA
Dr. Stefano Tasselli, CNR-IRSA

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