

Avviso di Seminario

Title: Physical and numerical modelling of transport, dispersion and accumulation of plastic debris in coastal environments

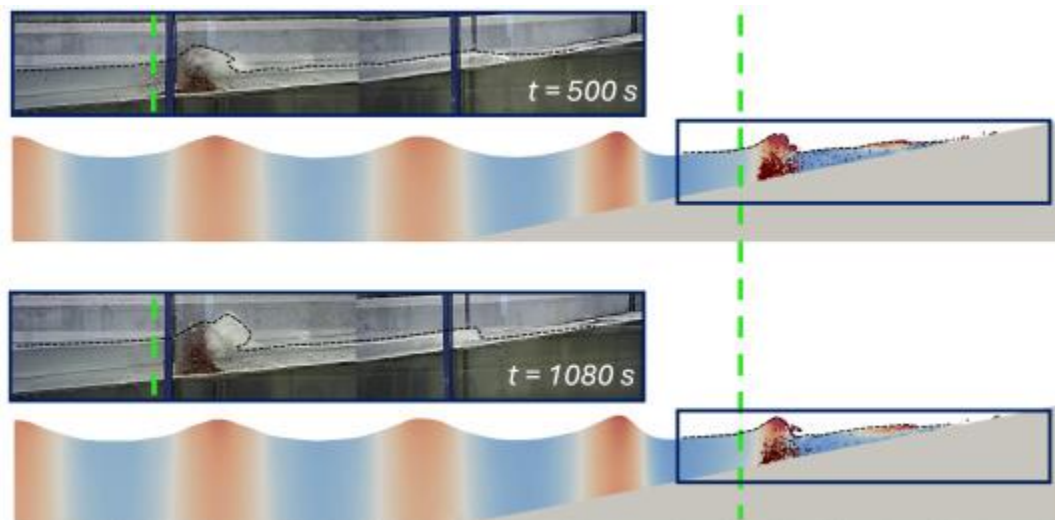
Where: Aula Seminari, Palazzina A, Primo Piano

When: Wednesday, 13 May 2026 at 11:00 (duration 1 hour)

Speaker: Dr. Paula Núñez Pérez (IHCantabria - Instituto de Hidráulica Ambiental de la Universidad de Cantabria)

Abstract

Plastic debris constitutes more than 80% of the total marine litter entering the ocean, and its abundance has been rising steadily over recent decades. This increasing load affects not only habitats and ecosystems, but also key socioeconomic sectors such as fisheries and tourism, as well as human health. Anticipating the transport and fate of plastic debris requires a solid understanding of the processes governing its transport, dispersion and accumulation. The transport, dispersion and accumulation of plastic debris in coastal environments are influenced by both hydrodynamic factors (waves, tides, and coastal currents) and the intrinsic properties of the debris (density, size, and shape). Their modelling and prediction are particularly complex within the surf zone, where wave-breaking-induced currents and turbulence are the dominant forces. This seminar provides an overview of recent advances in the transport, dispersion, and accumulation of plastic debris in coastal environments, with a particular focus on the physical and numerical (CFD-Lagrangian) modelling of such processes.



Short description of the speaker: Dr. Paula Núñez Pérez is researcher in the Oceanography, Estuaries, and Water Quality Group at the Environmental Hydraulics Institute of the University of Cantabria (IHCantabria) since 2013. Her research activity is mainly focused on the modelling of tide-driven hydrodynamics in estuarine environments, and on the transport and dispersion of plastic debris in estuarine and coastal environments. She was awarded the Margarita Salas Postdoctoral Grant, funded by the European Union-NextGenerationEU, the Spanish Ministry of Universities, and the Recovery, Transformation, and Resilience Plan, spending a one-year research stay at the University of Genoa, Italy.

For further information please contact Prof. Alessandro Romano (alessandro.romano@uniroma3.it).