

Seminario

Cyclone-Driven Sediment Pulses and River Morphodynamic Response in Tairāwhiti, Aotearoa New Zealand

Tuesday, 28 October 2025 – 16:30, Aula Arduino

Relatore: Prof. **Jon Tunncliffe**– University of Auckland, New Zealand



The Waiapu River is one of the most dynamic rivers in New Zealand (East Coast of the North Island), with the highest sediment yields in the country. A relatively weak lithologic substrate, historic land clearance, and rare but intense extra-tropical cyclones have resulted in exceptionally high rates of sediment mobilization. With the passage of cyclones Gabrielle and Hale in 2023, extensive geomorphic change was observed throughout the catchment. Leveraging a unique four-epoch airborne LiDAR dataset (2019, 2022 pre-storm; 2023, 2024 post-storm), we have quantified river sediment budgets and morphodynamic change at catchment scale, capturing a full disturbance-recovery sequence in high spatial and temporal resolution. In this talk we review the magnitude of change resulting from the events, and consider potential monitoring and modelling frameworks for evaluating future multi-decadal bedload transfers.

Proponente: **Simone Bizzi**

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