Online – 4-8 May 2020 – EGU General Assembly

Coarse sediment tracing experiment at the Promenade des Anglais (Nice, France)

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Introduction: coarse sediments tend to shift offshore at Nice's beach. Based on the steepness of the seafloor, no wave process is able to bring back the sediments to the foreshore

Motivation: increasing the basic knowledge about coarse sediment displacement at this beach quantifying the transport rate of coarse tracers 4, 24 and 48 hours after the injection during a time interval characterized by very low to no wave activity

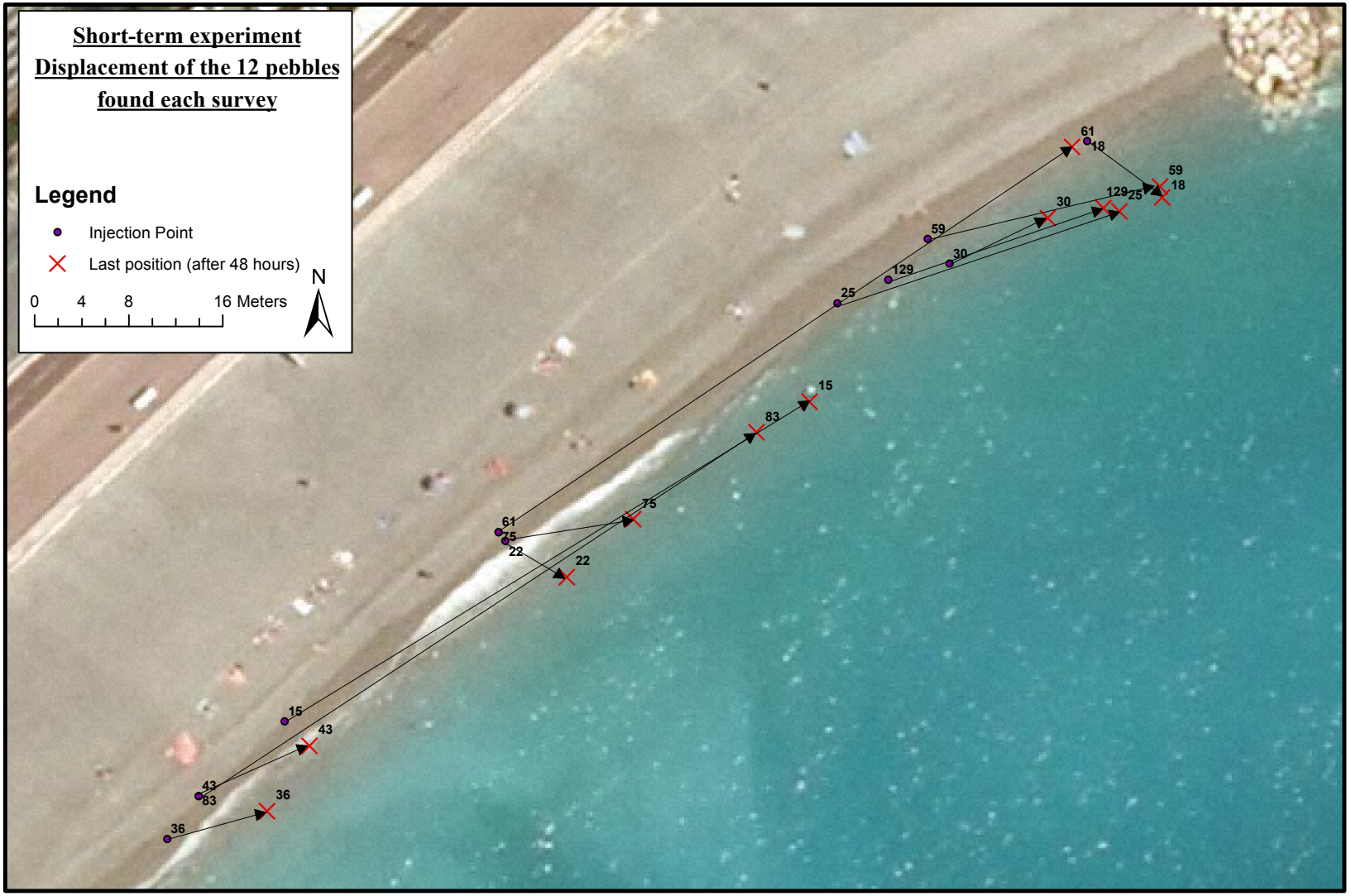
Preliminary results: 126 pebbles marked by RFID tags were injected in the swash-zone (January 2020) along cross-shore transects. The tracers were dropped on the fair-weather berm crest, on the foreshore, and on the step crest

The **table** shows the recovery rate of the tracers 4, 24 and 48 hours after the injection

4 hours	24 hours	48 hours
70	**115**	**18**

Preliminary results: plot showing displacement range and direction of the tracers that were recovered at each survey

Friction factors in as well: the paint has been scratched off the surface just after 24 hours



Future perspectives: the early results confirm that coarse sediments tend to move significantly in short timespans and with low wave activity (*Bertoni et al., 2013; Grottoli et al., 2019*)

Matching such data with those provided by topographic surveys and sea weather characteristics (waves and tide) would shed some light on the morphodynamics processes active at Nice's beach

References:
- Bertoni D., Grottoli E., Ciavola P., Sarti G., Benelli G., Pozzebon A., 2013. On the displacement of marked pebbles on two coarse-clastic beaches during short fair-weather periods (Marina di Pisa and Portonovo, Italy). *Geo-Marine Letters* **33**, 463-476. doi: 10.1007/s00367-013-0341-3
- Grottoli E., Bertoni D., Pozzebon A., Ciavola P., 2019. Influence of particle shape on pebble transport in a mixed sand and gravel beach during low energy conditions: Implications for nourishment projects. *Ocean and Coastal Management* **169**, 171-181. doi: 10.1016/j.ocecoaman.2018.12.014