

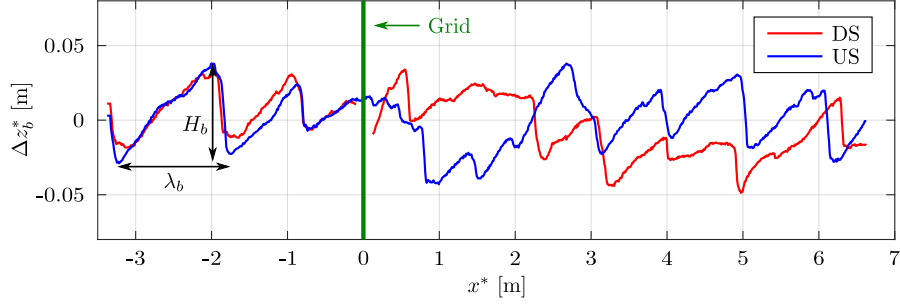
On steady alternate bars forced by a localized asymmetric drag distribution in erodible channels - Supplementary material

M. Redolfi¹ †, M. Musa² and M. Guala³

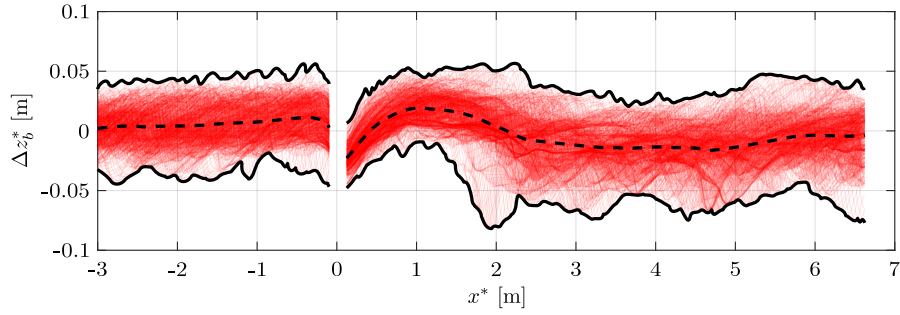
Here we report instantaneous bed elevation measurements during experiment G-D1, as an example of the data collected in all the experiments. As illustrated in figure 1, the bed elevation is highly variable, due to the presence of downstream-migrating dunes, having average length $\lambda_b = 1.2\text{m}$ and average height $H_b = 0.06\text{m}$. Bedforms height does not show significant spatial pattern, except for a slight tendency to become more prominent in the downstream part of the flume. However, comparison between G-D1 and baseline experiments (see standard deviation reported in figure 1d) show that the presence of the grid does not produce any remarkable effects on the dune height, though it may affect their migration velocity.

† Email address for correspondence: marco.redolfi@unitn.it

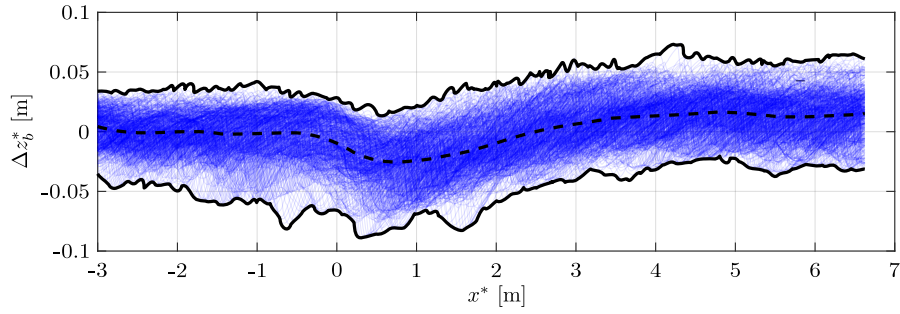
(a) Instantaneous profiles



(b) DS envelope



(c) US envelope



(d) Standard deviation

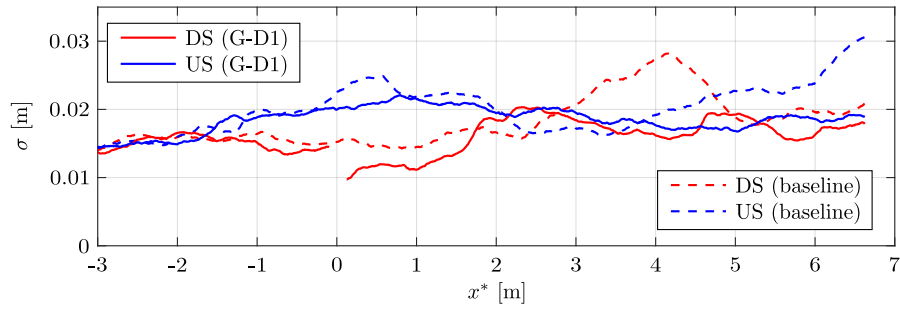


FIGURE 1. Instantaneous profiles of the detrended bed elevation Δz_b^* , showing the signal of migrating dunes during the experiment G-D1: (a) example of instantaneous profiles measured along the drag side (DS) and the unobstructed side (US) of the channel, with λ_b and H_b denoting the dune length and height, respectively; (b) and (c) all recorded profiles, associated envelope and profile of the mean bed elevation $\Delta \eta^*$ (dashed line); (d) spatial variation of the standard deviation of the bed elevation, $\sigma(\Delta z_b^*)$, and comparison with a baseline experiment, performed in the same conditions but without the presence of the porous grid.