

## The influence of frictional Chezy contributions on the shoreline motion

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### Abstract:

The dynamics of wave-forced flows near the shoreline is illustrated and discussed, with specific focus on the influence that frictional Chezy contributions have on the shoreline motion itself [1.]. An asymptotic analysis, valid for vanishing water depths, reveals that the use of such a term leads to a non-receding motion of the shoreline. This phenomenon is induced by a thin layer of water which, because of frictional forces, remains on the beach and keeps it wet seaward of the largest run-up. However, the dynamical influence of such a frictional layer of water on the global wave motion is very weak and practically negligible for most of the swash zone flow. The presence of a non-receding shoreline has called to some clarifications on the role of some ad-hoc tools used in numerical models for the prediction of the wet/dry interface. These will be discussed at the Conference.

### References:

1. M. Antuono, L. Soldini and M. Brocchini. "On the role of the Chezy frictional term near the shoreline." *Theor. Comp. Fluid Dyn.* 26(1-4), 105-116 (2012).