



Modification of a Wake model for hydrodynamic forces on submarine cables with a rough seabed

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In the present work we consider a slender cylinder (e.g., submarine pipeline or cable) characterized by the vortex shedding regime in the near flow field, either laying on the seabed or with some vertical height, with the aim of creating a simplified model of the hydrodynamic forces due to wave–current interaction. In particular for our application, we consider a potentially large seabed roughness, as compared to the size of the cylinder. Comparisons are made between published experimental results, numerical results obtained with the Navier-Stokes model Code_Saturne, and existing versions of the Wake model [1], [2], [3], [4], in order to show what modifications are required to couple such a simplified approach to a wave–current model of the turbulent bottom boundary layer.

References

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