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Numerical simulation of the capillary-gravity waves excited by an obstacle HIDESHI HANAZAKI, RYOSUKE INOMATA, Kyoto University — Capillary gravity waves excited by an obstacle are investigated by the unsteady numerical solution of the Euler equations. It is well known that the large-amplitude upstream advancing solitary waves are generated periodically under the resonant condition of Fr=1 (Fr: Froude number), i.e., when the phase velocity of the long surface waves agrees with the mean flow speed. With capillary effects (Bo>0), short waves are newly generated by the upstream solitary waves of large amplitude. In this study it is investigated how the characteristics of the solitary waves and the short waves, especially their amplitudes, change due to the variation of the obstacle height and the Froude number. The results will be compared also with the solutions of the forced KdV-type equations.

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