



Numerical simulation of a floating buoy in surface waves

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A numerical method based on volumic penalization is developed to track a floating body in a two phase flows (air and water). Fast computations on parallel computer are performed thanks to an adaptative mesh refinement following a numerical entropy criterion together with a variable time step depending on the mesh size.

Applications concern the motion of a floating buoy in a surface wave field and the induced perturbation of the wave and atmospheric fields by the buoy. Presented cases concern a breaking wave and a second order Stokes wave as initial conditions.

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