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STRUCTURAL ENGINEERING / EARTHQUAKE ENGINEERING

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[\[PDF \(849K\)\]](#) [\[References\]](#)**A NEW MESH RE-GENERATION METHOD FOR FREE SURFACE FLOW ANALYSIS BASED ON INTERFACE-TRACKING METHOD**Seizo TANAKA¹⁾ and Kazuo KASHIYAMA¹⁾

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This paper presents a new mesh re-generation technique for free surface flow analysis based on the interface-tracking method. The incompressible Navier-Stokes equation based on the arbitrary Lagrangian-Eulerian description is used as the governing equation. The SUPG/PSPG formulation is employed for the finite element discretization. The coupled non-linear finite element equations are linearized by the Newton-Raphson method. As numerical examples, the present method is applied to the sloshing problem, the broken-dam problem and the fountain flow problem in a rectangular tank. The efficiency of the present method is shown by these numerical results.

Key Words: mesh re-generation technique, free surface flow, interface-tracking method, ALE stabilized finite element method

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