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## Small-Scale Surface Details Simulation using Divergence-free SPH

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### Abstract

To realistic and efficient capture of microscopic features of fluid surface, we proposed a novel method for creating small-scale surface details. In this paper we introduced a surface tension and adhesion model to simulate surface details, which refined the cohesion term and area minimization term. It modified the calculation of surface tension and adhesion and enlarged the support length for cohesion, which makes the microscopic characteristics of surface details more visible. In addition, we integrated this model with a Divergence-free SPH method which fulfills constant density condition and divergence-free condition simultaneously. The experimental results show that our method can well simulate small-scale details of fluid surface in various scenarios meanwhile improves the computational stability and efficiency.

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