Multiscale SPH model for multiphase flow[1] ALEXANDRE TAR-
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We present nonlocal multiscale partial differential equations for multiphase flow and
their smoothed particle hydrodynamics (SPH) discretization. We demonstrate that
this model is able to describe multiphase flow at scales ranging from micro (nano)
to macro scales and predicts curvature dependence of the surface tension. The non-
local model is obtained in the form of an integral of a molecular-force-like function
added into the momentum conservation equation. Our SPH simulations of multi-
phase flow in porous materials and droplet and film flow on rough surfaces further
reveal multiscale features of the proposed model.

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