

Abstract Submitted  
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**Three-phase contact line at small scale** ANTONIO PEREIRA, SERAFIM KALLIADASIS, Department of Chemical Engineering, Imperial College London, UK — We investigate the area around an equilibrium three-phase contact line at a small scale by using a density functional approach. A typical system is made of a planar wall in contact with a Lennard-Jones gas below the critical temperature. The wall exerts an attractive force on the fluid molecules so that a thin film can usually form between the wall and the gas. We focus on two cases. When the chemical potential is smaller than its coexistence value and the system presents a phase transition with respect to the film thickness, we examine the area between the two equilibrium film thicknesses. It appears to be smooth and several molecular diameters long. When the chemical potential is at its coexistence value, computations of the equilibrium density profiles show a well formed contact angle whose value follows closely the Young equation.

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