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Capillary Condensation: an Analysis of the Phase Transition MARIE ROMANO, ANASTASIA YORKE, KATHARYN CHRISTIANA, CAR-OLINA C. ILIE, SUNY Oswego, CONDENSED MATTER GROUP TEAM — We explore herein the capillary condensation for planar geometry. Capillary condensation is studied in the presence of van der Waals forces. We derive the grand free energy for one planar substrate, then for two identical substrates, and we analyze the phase transitions, the absorption isotherms and the triple point. Phase transitions between full, empty and two films are investigated and the shape of the liquid between two infinite planes in the transition case between full and film. Other interesting cases may be inspected.

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