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Budding transition of a self-avoiding polymer confined by a soft membrane adhering onto a flat wall[1] YU-CHENG SU, JEFF Z. Y. CHEN, University of Waterloo — The Monte Carlo simulation is used to study the structural properties of the system consisting of a self-avoiding polymer chain confined between a fluid membrane and a flat hard surface. As the adhesion between the soft membrane and the hard-wall surface increases, the polymer is subject to a strong confinement; the state containing a pancake-shaped polymer conformation eventually yields to a bud state, through an abrupt, first-order phase transition. We explore the scaling behavior of the physical properties of the system as functions of the polymer's size, the membrane's surface tension, and the adhesion energy, for both pancake and bud states, in terms of Monte Carlo data and analytic scaling theories.

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