Transitions of a tethered chain under tension JUTTA LUETTMER-STRATHMANN, The University of Akron, Akron, Ohio, WOLFGANG PAUL, KURT BINDER, Johannes Gutenberg Universitaet Mainz, Germany — When the end of a polymer chain tethered to an attractive surface is pulled away from the surface, the force required to extend the chain depends on interactions with the surface as well as intrachain interactions. Similarly, when the chain is held fixed and the temperature is reduced, both adsorption and collapse transitions have a signature in the force-extension curve. In this work, we performed Monte Carlo simulations of the bond-fluctuation model with a Wang-Landau algorithm to determine the density of states in the state space of monomer-monomer contacts, monomer-surface contacts, and chain extension. We study the effect of tension on the collapse and adsorption transitions and calculate force-extension curves that may be compared with experimental data.

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