148e Monte Carlo Simulation of Polymers within a Lattice

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Polymers are a highly interesting topic which is applicable to many fields such as nucleic acid chain studies, biological materials, plastics, and textiles. Although experimental studies are relevant for polymer systems, real polymers require computational models to fully characterize the complicated behavior. In oder to create a valid, accurate computational model, the model must be both ergodic and able to reproduce the dynamic properties of the system. With these points in mind, a lattice model was created so that different polymer movement algorithms could be tested. These algorithms include local as well as global rules of motion with the intent of exploring the entire phase space, thus making the equilibrium property estimations more accurate. Once the rules of motion are incorporated into the model, the equilibrium properties can be compared to other models which investigate the same properties for a polymer system.