**Jamming of semiflexible polymers**\(^1\) ROBERT S. HOY, Univ of South Florida — We study jamming in model freely rotating polymers as a function of chain length \(N\) and bond angle \(\theta_0\). The volume fraction at jamming, \(\phi_J(\theta_0)\), is minimal for rigid-rod-like chains (\(\theta_0 = 0\)), and increases monotonically with increasing \(\theta_0 \leq \pi/2\). In contrast to flexible polymers, marginally jammed states of freely rotating polymers are highly hypostatic, even when bond and angle constraints are accounted for. Large aspect ratio (small \(\theta_0\)) chains behave comparably to stiff fibers: resistance to large-scale bending plays a major role in their jamming phenomenology. Low aspect ratio (large \(\theta_0\)) chains behave more like flexible polymers, but still jam at much lower densities due to the presence of frozen-in 3-body correlations corresponding to the fixed bond angles. Long-chain systems jam at lower \(\phi\) and are more hypostatic at jamming than short-chain systems. Implications of these findings for polymer solidification are discussed.

\(^1\)Support from NSF Grant No. DMR-1555242 is gratefully acknowledged