

## **Comparative analysis of damping functions for linear, pom-pom and branched polymers**

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Behavior of linear polymers is well characterized by Doi and Edwards (DE) theory and represents a basis for describing any polymeric systems. Compared to linear polymers, the pom-pom polymers exhibit weaker damping for small strains, and approach DE damping for higher strains with branching point withdrawal. The branched polymers (combs and commercial LDPEs) exhibit weaker damping than the linear polymers, and do not exhibit sudden branching point withdrawal. The branching points of these polymers are distributed randomly along a backbone and produce less resistance to retraction than the pom-pom polymers. Therefore the branching points are probably withdrawn smoothly during deformation and a polymer backbone subjects to DE dynamics. This contribution analyses weaker damping of the branched polymers.