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**Local mobility of polymer chains with specific interactions**[1]
JUTTA LUETTMER-STRATHMANN, University of Akron — The local mobility of polymer chains depends on single-chain properties as well as the local environment of the chain segments. Recent experiments on polymer blends have shown that hydrogen bonding has a large effect on the segmental relaxation of the polymers in the blend; cf. Ref. [1]. In earlier work, we developed a simple lattice model for poly (ethylene oxide) (PEO) in aqueous solutions that accounts for entropic and enthalpic effects of specific interactions. We applied it to the Soret effect of PEO in ethanol/water mixtures and found qualitative agreement between theory and experimental data. In this work, we consider a lattice model for dense polymeric systems with specific interactions and present first results for the effect of hydrogen bonding on the mobility of chain segments. [1] S. H. Zhang, X. Jin, P. C. Painter, and J. Runt, Polymer 45, 3993 (2004).

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