

Abstract Submitted
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On the Dynamics of Polymer Brushes MICHAEL LANG, RON DOCKHORN, MARCO WERNER, TORSTEN KREER, JENS-UWE SOMMER, Leibniz Institute of Polymer Research Dresden, Hohe Straße 6, Dresden, Germany — We analyze the relaxation dynamics of densely grafted layers of polymer chains under good solvent conditions by Monte Carlo simulations. We find anisotropic monomer mean square displacements when comparing the directions parallel and perpendicular to the grafting plane at intermediate time scales. Our analysis further reveals that the chains relax from the free end towards the innermost monomers. A plateau is observed for the bond-autocorrelation function that grows exponentially in time for the innermost monomers of the brush. Our observations indicate that chain retraction might be the dominating mechanism for the long time relaxation of densely grafted chains.

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