Eleni Panagiotou* (panagiotou@math.ucsb.edu), South Hall, Room 6523, Department of Mathematics, University of California Santa Barbara, Santa Barbara, CA 93106-3080, and Martin Kroeger. Pulling-force-induced elongation and alignment effects on entanglement and knotting characteristics of linear polymers in a melt.

We employ a primitive path (PP) algorithm and the Gauss linking integral to study the degree of entanglement and knotting characteristics of linear polymer model chains in a melt under the action of a constant pulling force applied to selected chain ends. Our results for the amount of entanglement, the linking number, the average crossing number, the writhe of the chains and their PPs and the writhe of the entanglement strands all suggest a different response at the length scale of entanglement strands than that of the chains themselves and of the corresponding PPs. (Received August 17, 2015)