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A simple bead necklace model to study secondary relaxations in glassy polymer melts and blends DMITRY BEDROV, GRANT SMITH, University of Utah — We demonstrate that molecular dynamics simulations using a simple bead necklace polymer model are capable to show distinct primary and secondary (or Johari-Goldstein) relaxation processes of backbone segments in linear polymer melts and blends. Despite the simplicity of the utilized polymer model, chains are comprised of only one type of beads and bonds, the observed secondary relaxations show characteristics defining the true Johari-Goldstein process, therefore allowing fundamental study of underlying mechanisms of secondary relaxations as well as their correlation with primary relaxation in polymer melts and blends as a function of temperature and pressure.

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