

Abstract Submitted
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Coalescence Model for Crumpled Globules Formed in Polymer Collapse GUY BUNIN, MEHRAN KARDAR, Massachusetts Inst of Tech-MIT
— The rapid collapse of a polymer, due to external forces or changes in solvent, yields a long-lived "crumpled globule." The conjectured fractal structure shaped by hierarchical collapse dynamics has proved difficult to establish, even with large simulations. To unravel this puzzle, we study a coarse-grained model of in-falling spherical blobs that coalesce upon contact. Distances between pairs of monomers are assigned upon their initial coalescence, and do not "equilibrate" subsequently. Surprisingly, the model reproduces quantitatively the dependence of distance on segment length, suggesting that the slow approach to scaling is related to the wide distribution of blob sizes.

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