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**Untangling colloidal caging in entangled PEG solutions** SUBHALAKSHMI KUMAR, TSANG CHI HANG BOYCE, STEVE GRANICK, University of Illinois Urbana-Champaign — Using fluorescence microscopy, we record motion of colloids of size intermediate between correlation length of a polymer solution and size of a polymer molecule in entangled regime. The analysis of trajectory points of colloids show a transition from “caged” localization to diffusive randomization. The size and time spent in each individual cage is quantified using several statistical methods to give a distribution that is remarkably well-behaved and whose averages are consistent with values obtained from ensemble-average methods of trajectory analyses.

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