

Abstract Submitted  
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**Motorized adhesive particles in localized phases: A toy model for the controlling of viscoelastic phases of cytoskeletal assembly** TONGYE SHEN, PETER WOLYNES, UCSD — The cytoskeleton is not an equilibrium structure. To begin to investigate it, we studied a system of motorized particles that may capture the far-from-equilibrium essence of its dynamics. Variational solutions of the manybody master equation for a set of motorized spherical particles accounts for their Brownian motion as well as for motorized kickings. These approximations yield stability limits for crystalline phases and frozen amorphous structures. The methods allow one to relate the strength of nonequilibrium effects and adhesiveness (effective cross-linking of cytoskeleton) to the mechanical stability of localized phases as a function of density and/or temperature. Interestingly nonequilibrium noise does not necessarily destabilize the structures. The dynamics issues are also touched.

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