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**Renormalized dynamics of overdamped driven elastic media**
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— We present the results of a dynamical renormalization group calculation used to explore the fluctuations of an elastic body steadily driven through a viscous background fluid. Direct applications of this work involve the study of the fluctuation spectrum of semiflexible filament networks driven through a background fluid by e.g. polymerization, but also include the motion of one-dimensional driven elastic objects (e.g. polymers, flux vortices etc.) In that case, a previous linear stability analysis suggests that, when such elastic lines are driven in a direction perpendicular to their axis, they become unstable at any non-zero driving force [1]. We discuss the affect of nonlinearities on these conclusions, showing that such terms can stabilize the system at finite drive velocities. We similarly explore the dynamics of lines driven parallel their axis showing that these systems exhibit "weak dynamic scaling" [2]. Turning to the case of driven elastic solids, we report on the effect of molecular motor-induced forces on the long length scale and long time scale dynamics of the driven system. [1] R. Lahiri and S. Ramaswamy, Are steadily moving crystals unstable?, Phys. Rev. Lett. 79, 1150 (1997) [2] D. Das et al., Weak and strong dynamic scaling in a one-dimensional driven coupled-field model: Effects of kinematic waves, PRE 64, 021402 (2001).

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