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**Crossover from Intermittent to Continuum Dynamics
for Locally Driven Colloids** CHARLES REICHHARDT, CYNTHIA
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ear Studies, Los Alamos National Laboratory — We simulate a colloid
with charge q_d driven through a disordered assembly of interacting col-
loids with charge q and show that, for $q_d \approx q$, the velocity-force relation
is nonlinear and the velocity fluctuations of the driven particle are highly
intermittent with a $1/f$ characteristic. When $q_d \gg q$, the average ve-
locity drops, the velocity force relation becomes linear, and the velocity
fluctuations are Gaussian. We discuss the results in terms of a crossover
from strongly intermittent heterogeneous dynamics to continuum dy-
namics. We also make several predictions for the transient response in
the different regimes.

Prefer Oral Session
 Prefer Poster Session

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