Supplementary Material for "Diffusive ferromagnetic roller gas"

Gašper Kokot,[1] Andrej Vilfan,[1,2] Andreas Glatz,[1,2] and Alexey Snezhko[1]

[1] *Materials Science Division, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439*
[2] *Department of Physics, Northern Illinois University, DeKalb, IL 60115, USA*

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EXPERIMENTAL DISPLACEMENT STATISTICS OF INERT PARTICLES

For experiments with inert particles we used glass 150 µm diameter beads to match the size of the active rollers.

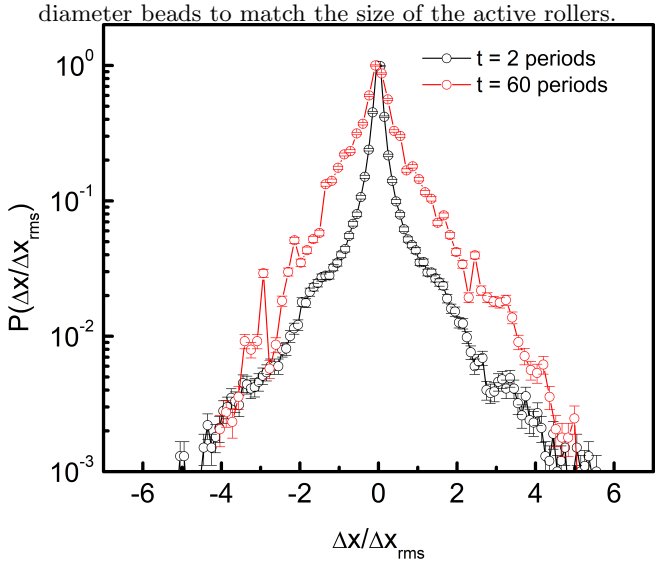

Fig. S1. Experimental inert particle displacement distributions for short ($t = 2$ field periods) and intermediate times ($t = 60$ field periods) obtained for the particle number density $S_A = 0.4\,\mathrm{mm}^{-2}$.

The inert particles displacement statistics has a pronounced central peak in both, experiments (Fig. S 1) and simulation (main text Fig. 3e). It reaches a Gaussian distribution for times longer than 2 s.

MOVIE CAPTION

Movie 1: An example of a magnetic roller gas realised for the particle number density $S_A = 0.4\,\mathrm{mm}^{-2}$. The playback is in real time, scalebar is 5 mm.