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Emergent Structures in Dissipative Wave-Particle Systems DAVIT SIVIL, ALFRED HUBLER, Center for Complex Systems Research, Department of Physics, University of Illinois at Urbana-Champaign — We study the motion of a particle with mass m on a vibrated string of length L. We assume that there is a friction force between the particle and the string. The string is sinusoidally forced at both ends. We find that the particle has attractors located at x=L/2 - $n\pi c/2\omega$, where ω is the frequency of the waves on the string, and $n \in Z$. We also study the attractors of the same system with multiple driving frequencies. We also compared our results with numerical simulations.

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