Erratum: Observation of Noise and Dissipation Effects on Dynamical Localization [Phys. Rev. Lett. 81, 1203 (1998)]

B. G. Klappauf, W. H. Oskay, D. A. Steck, and M. G. Raizen

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Since the publication of our Letter, we have become aware of a complicating factor in the experiment. Because of a timing error, a fraction of the atoms, which we estimate to be less than 20%, were in the $F = 3$ ground state and not in the $F = 4$ ground state, as implied in the Letter. These atoms did not interact as strongly with the standing wave and hence did not diffuse as much as the $F = 4$ atoms. As a result, the distributions in Fig. 1 of the Letter had exaggerated sharp bumps at their centers.

We have corrected this problem by turning off the repump laser light from L2 (which pumps atoms out of the $F = 3$ state) 100 μs after the trapping laser light from L1 is extinguished. This process ensures that all of the atoms are pumped into the $F = 4$ state before the interaction with the standing wave takes place. Our measured distributions after implementing this correction appear in Fig. 1.

The mixed population also resulted in a systematic reduction of the measured energies shown in Fig. 2 of the Letter on the order of 20%. However, the important feature of the energy data is the relative energy increase in the presence of noise and dissipation, which is unaffected by the $F = 3$ population.

The conclusions of our Letter are not affected by this error, and we hope that the distributions in Fig. 1 here will facilitate better comparison with theory.

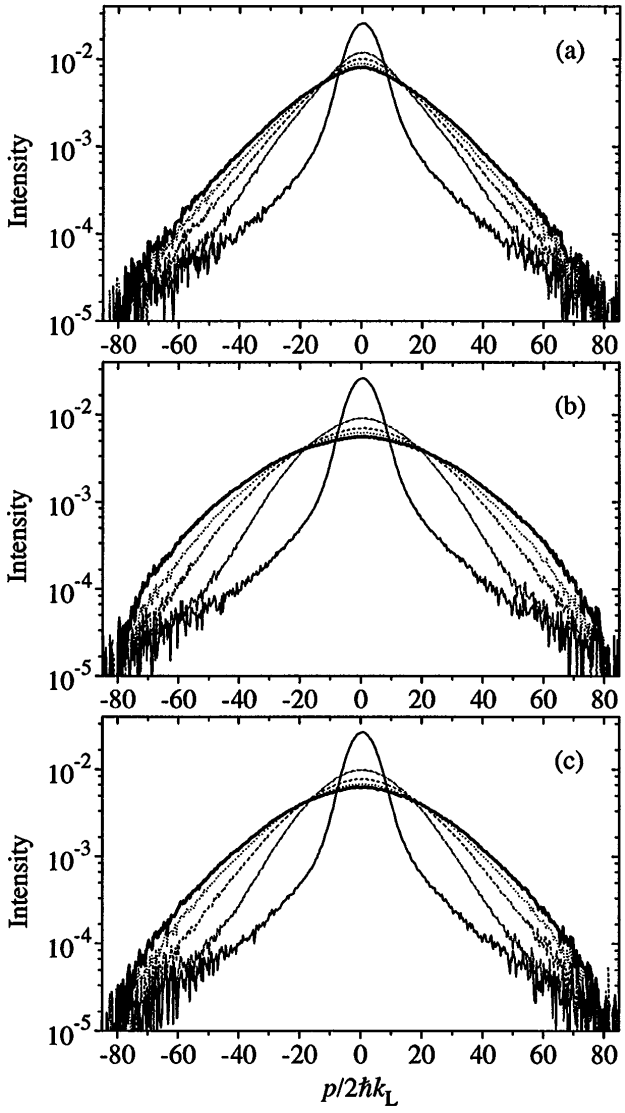

FIG. 1. Comparison of the momentum distribution evolution for the cases of (a) no noise, (b) 62.5% amplitude noise, and (c) dissipation from 13%/kick spontaneous scattering probability. Time steps shown are 0 kicks (light solid line), 17 kicks (dash-dotted line), 34 kicks (dashed line), 51 kicks (dotted line), and 68 kicks (heavy solid line). The vertical scale is logarithmic and in arbitrary units.

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