Erratum: Spatiotemporal characterization of interfacial Faraday waves by means of a light absorption technique [Phys. Rev. E 72, 036209 (2005)]

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We recently became aware that the reduced acceleration ε in the figures was not normalized correctly. Instead of using the critical acceleration a_c for the normalization of $\varepsilon=(a_0-a_c)/a_c$, the actual acceleration amplitude a_0 was used, i.e., $[\varepsilon=(a_0-a_c)/a_0]$. The qualitative appearance of all our data is not altered but for some figures the scale of the abscissa must be stretched. The corrections lead to a modification of Figs. 5, 6, 8, and 13.

Figures 5(a)–5(c) show the temporal spectra at an acceleration of $a=30\ \mathrm{m/s^2}$ ($\varepsilon=0.203$) and Figs. 5(d)–5(f) at an acceleration of $a=38\ \mathrm{m/s^2}$ ($\varepsilon=0.525$). The Fourier transform for Fig. 5(c) was recalculated with noise subtraction in the temporal signal and now there is no visible Fourier component at zero frequency anymore.

In Figs. 6(a) and 6(b) the abscissa covers the range from $\varepsilon=-0.05$ to $\varepsilon=0.65$. In Fig. 6(c) the abscissa covers the range from $\varepsilon=0$ to $\varepsilon=0.25$. In Fig. 8 the abscissa covers the range from $\varepsilon=0$ to $\varepsilon=0.65$. In Fig. 13(a) the abscissa covers the range from $\varepsilon=-0.1$ to $\varepsilon=0.65$. The temporal behavior of the $A(11)$ mode in Fig. 4(c) is now inverted.

For the text, the following corrections apply:

On page 3, first column, first line, the reduced acceleration should by replaced by "$\varepsilon=(a_0-a_c)/a_c$."

In the caption of Fig. 2 "$\varepsilon=0.17$" should be replaced by "$\varepsilon=0.203$."

On page 6 (left column, first paragraph "$\Gamma=0.179\ \mathrm{mm^2}$" should be replaced by "$\Gamma=0.185\ \mathrm{mm^2}$."

In the caption of Fig. 10 "$\varepsilon=0.37$ ($a_0=39.3\ \mathrm{m/s^2}$)" should be replaced by "$\varepsilon=0.571$ ($a_0=39.1\ \mathrm{m/s^2}$)."

On page 6 (right column, first line in the section "B. Hexagonal state") "($0.2<\varepsilon<0.28$)" should be replaced by "($0.28<\varepsilon<0.39$)."

We are very grateful to Nicolas Périnet, Damir Juric, and Laurette Tuckerman for pointing out these mistakes and refer the readers to their forthcoming publication on a numerical simulation of Faraday waves [1].

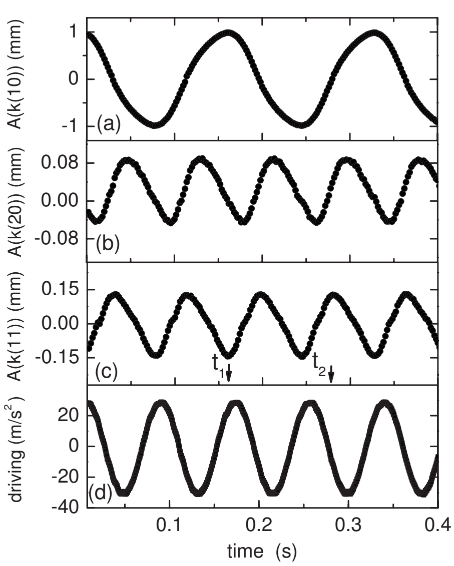

FIG. 4. Temporal behavior of amplitudes A corresponding to spatial modes $k(10)$ [(a)], $k(20)$ [(b)], and $k(11)$ [(c)] of the square Faraday pattern at $\Omega/2\pi=12$ Hz and $\varepsilon=0.203$ ($a_0=30.0\ \mathrm{m/s^2}$). (d) shows the driving signal $a(t)$. Please note, that in contrast to Ref. [2], not the square root of the power spectra but the amplitude A of the surface elevation $h(\mathbf{r},t)=A\cos[\mathbf{k}(ij)\cdot\mathbf{r}]$ is shown.

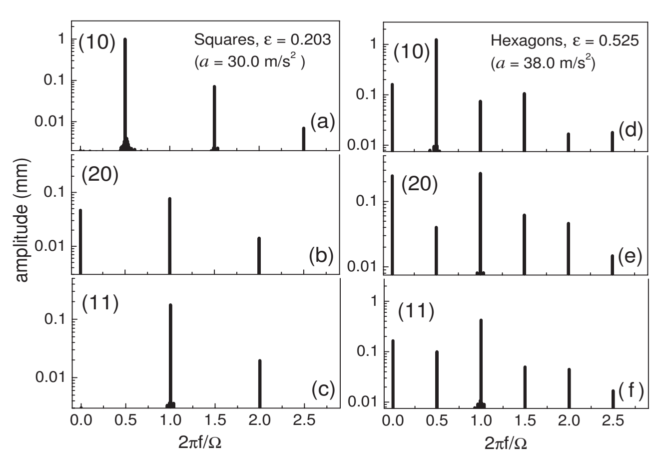

FIG. 5. Temporal Fourier spectra ($\Omega/2\pi=12$ Hz) of the amplitudes $A[\mathbf{k}(ij,\omega)]$ corresponding to several spatial modes of the oscillating square Faraday pattern [(a), (b), and (c)] ($\varepsilon=0.203$) and hexagonal Faraday pattern [(d), (e), and (f)] ($\varepsilon=0.525$).

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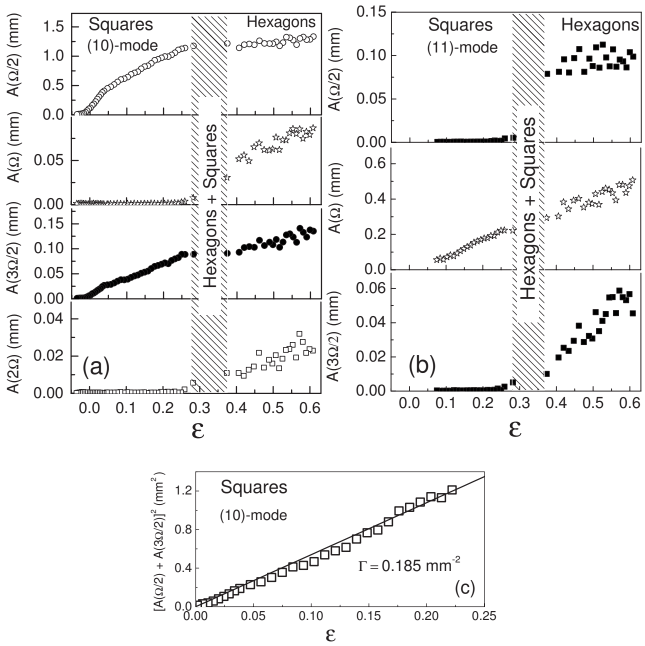

FIG. 6. Amplitudes $A(n\Omega/2)$ of the $\mathbf{k}(10)$ [(a)] and $\mathbf{k}(11)$ [(b)] modes at $\Omega/2\pi=12$ Hz as a function of the driving strength ε. (c) The square of the sum of the subharmonic components of the (10)-mode versus ε. As would be expected for a forward bifurcation the data can be linearly fitted, at least up to driving strength of $\varepsilon \approx 0.23$.

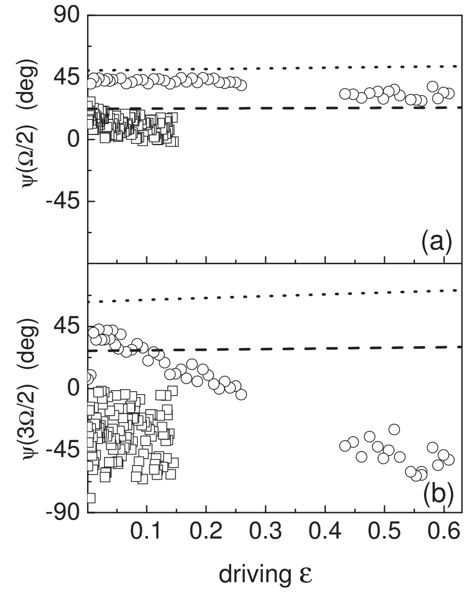

FIG. 8. Temporal phases $\psi(\Omega/2)$ [(a)] and $\psi(3\Omega/2)$ [(b)] of the $\mathbf{k}(10)$ mode for two driving frequencies versus driving strength ε. The symbols are the experimental data, the lines are the theoretical calculations. Squares and broken line: $\Omega/2\pi=57$ Hz; circles and dotted line: $\Omega/2\pi=12$ Hz. In the range $0.28<\varepsilon<0.39$ a transition from squares to hexagons takes place leading thus to a disordered state. For this reason an extraction of the phases is not possible there.

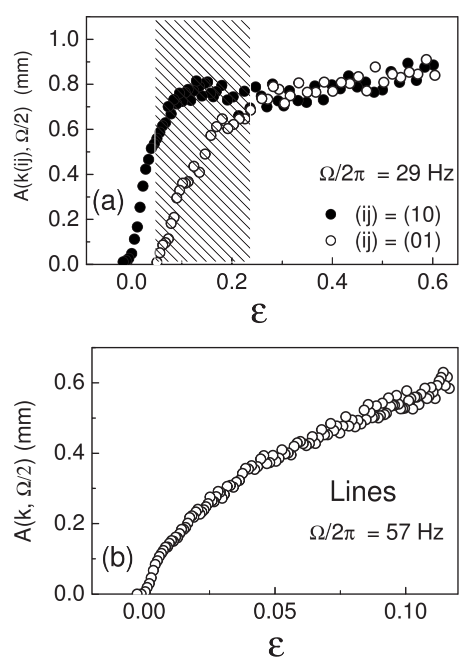

FIG. 13. The amplitudes $A(\Omega/2)$ of the $\mathbf{k}(10)$ and $\mathbf{k}(01)$ modes at $\Omega/2\pi=29$ Hz [(a)], and $\mathbf{k}(1)$ mode at $\Omega/2\pi=57$ Hz [(b)] as a function of the driving strength ε. The marked strip in (a) indicates the region of the crossed rolls state.

[1] N. Périnet, D. Juric, and L. S. Tuckerman, e-print arXiv:0901.0464.