ERRATA

Diffusion and Segregation in Inhomogeneous Media and the Ge_xSi_{1-x} Heterostructure [Phys. Rev. Lett. 63, 2492 (1989)]

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The above Letter presented a theory of diffusion and segregation in heterostructures. A more rigorous procedure of derivation [1] has led to the discovery of a small, nonetheless important, error in that paper: In Eq. (3), n_i should be N_C for donors, and N_V for acceptors. This error led to an extra term of $\frac{1}{2}E_g$ in both Eq. (5) and the exponent of Eq. (11), as well as an error in the preexponential factor. Equation (11) should read

$$k_{\text{seg}}=\left[\frac{N_C(N_2)}{N_C(0)}\right]^{1/2}\exp\left[\frac{1}{2kT}[Z_1\Delta W_i(N_2)+\Delta E_{b1}(N_2)-\theta\beta_1\beta_2N_2]\right].$$

An important part of the energetics affecting the chemical potential of a dopant in a heterostructure is the strain energy, which comprises both the internal strain and the external strain. The external strain, which in the present case is the pseudomorphic epitaxial strain, is unambiguous and easily found from macroscopic elasticity theory, as given in the Letter. The internal strain of nonstoichiometric alloys is much trickier. A critical examination of the issue of internal strain and various models for its calculation [1] has led to the conclusion that the internal strain can be neglected compared to the external strain. Hence, the strain energy parameter θ in Eqs. (10)–(13) of the Letter should read

$$\theta=\begin{cases}6K\dfrac{1-2\nu}{1-\nu}, & \text{for isotropic media},\\[2ex] 2(c_{11}+2c_{12})\left(1-\dfrac{c_{12}}{c_{11}}\right), & \text{for cubic crystals}.\end{cases}$$

[1] S. M. Hu (to be published).

Breathing Vortex Solitons in Nonrelativistic Chern-Simons Gauge Theory [Phys. Rev. Lett. 67, 411 (1991)]

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The published *Note added* is incorrect. The correct one follows.

Note added.—After submitting this Letter we learned from Jackiw and Pi that the time-dependent dilation (5) was previously considered by Jackiw [R. Jackiw, Ann. Phys. (N.Y.) **201**, 83 (1990)]. They also informed us that using a different gauge from ours they have applied a semiclassical quantization to our time-dependent periodic solitons [R. Jackiw and S-Y. Pi, following Letter, Phys. Rev. Lett. **67**, 415 (1991)]. Their result does not coincide with ours. We can account for this disagreement as follows. Note that in the nonrelativistic CS gauge theory the time-dependent gauge transformation such as $\psi\rightarrow e^{i\lambda t}\psi$, $a_\mu\rightarrow a_\mu+\partial_\mu(\lambda t)$ induces a shift of the Lagrangian density by the amount $-(\lambda/4\alpha)\varepsilon^{ij}\partial_i a_j$, and this term turns out to change the origin of the energy as $E\rightarrow E+\frac{1}{2}\lambda Q$, where Q is the statistical charge. Now, the JP gauge choice is such that $\lim_{r\rightarrow\infty}a_0(t,r)=0$, while it is easy to see that $\lim_{r\rightarrow\infty}a_0(t,r)=-(\alpha/|\alpha|)N\omega$ in our case. (The condition for the spatial component, $\partial_k a_k=0$, is the same between these two gauges.) Therefore, after semiclassical quantization in the JP gauge our result reads as $E=\omega[(p+q)+\frac{1}{2}NS]$, where N and S are the vorticity and the spin of the soliton. This agrees with the JP result with $\mathcal{N}=p+q$ being the principal quantum number in their formula.