Errata

Erratum: Renormalization, vortices, and symmetry-breaking perturbations in the two-dimensional planar model [Phys. Rev. B 16, 1217 (1977)]

Jorge V. José, Leo P. Kadanoff, Scott Kirkpatrick, and David R. Nelson

(i) The squares in Fig. 14 were not explained. They delineate $dT_{\rm eff}/dl$ for $p=\infty$, i.e., the isotropic planar model.

(ii) The dotted line in Fig. 18 was not explained. Hamiltonians above this line are thermodynamically unstable. The dashed line indicating the locus of initial Hamiltonians falls within the stability region.

(iii) The factor of $\frac{1}{8}$ on the right-hand side of (4.28) should be replaced by $\frac{1}{4}$. Although this has no effect on our results, it does produce a host of changes in other equations. Specifically, the summations and integrations in Eqs. (4.30), (4.32), (4.34), (5.1), (5.2), and (5.4) should be multiplied by the factor 2. Equations (5.6a), (5.15a), (5.16a), and (5.17a) should also be multiplied by the factor 2. Finally, Eq. (5.5) should read

$$(K^{-1})' = K^{-1} + 4\pi^3 y^2 \ln b\,. \tag{5.5}$$

With these changes, (5.6a) and (5.6b) are in exact agreement with results found previously by Kosterlitz (Ref. 12).

(iv) Equations (B2b) and (B3a) (see Appendix B) should read

$$k_B T_c(n,\epsilon)/J = 6\epsilon/(n-2) + O(\epsilon^2)\,, \tag{B2b}$$

$$\frac{k_B T_0}{J} = \lim_{\epsilon\to 0}\lim_{n\to 2}\frac{(n-2)k_B T_c(n,\epsilon)}{\epsilon J} = \begin{cases} 2\pi, & \text{spin wave}\,, \\ 6, & \text{Migdal}\,. \end{cases} \tag{B3a}$$

These results now agree with Ref. 40. Equation (B4) now reads

$$\lambda_p(T) = 2 - \tfrac{1}{4}(1-\alpha)p^2 k_B T/J = 2 - \tfrac{3}{2}(1-\alpha)p^2(T/T_0)\,, \tag{B4}$$

so to get agreement with (B5) we must take

$$\alpha = \tfrac{2}{3} \tag{B6}$$

instead of $\alpha = \frac{1}{2}$ as suggested by Fig. 21. Fortunately, we found our results to be insensitive to the precise choice of α. Nevertheless, this discrepancy points up as yet unresolved difficulties in the Migdal approach when applied to on-site coupling constants.

Erratum: Self-diffusion calculation for fcc metals [Phys. Rev. B 16,1164 (1977)]

L. Kornblit, J. Pelleg, and A. Rabinovitch

There is an error in Eq. (3.12), namely, the coefficient 1.550 18 must be replaced by 1.077 83.