Statistical Physics Of Liquids at Freezing and Beyond

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Errata

- Page 14 : Eqn. (1.2.20) the left hand side
  $... = -\ln \mathcal{Z}_N - \beta \bar{H}$,
- Page 16 : Eqn. (1.2.35) the right hand side

$$... = -\sum_{N=0}^{\infty} \frac{1}{h^{3N} N!} \int ...$$

- Page 16 : Eqn. (1.2.32) the left hand side
  $... = -\ln \Xi - \beta \bar{H} + ...$
- Page 18 : Eqn. (1.2.49) the left hand side $-k_B T \ln \Delta$
- Page 18 : line bleow Eqn. (1.2.51) "... with the dimension of inverse volume introduced ..."
- Page 21 : Eqn. (1.2.61) the last integral $... \int_{-1}^{+1} d\mathbf{r}'_N \exp ...$
- Page 49 : Eqn. (1.3.74) the RHS is $-R'_{ba}(-\omega)$
- Page 49 : Eqn. (1.3.75) the RHS is $R''_{ba}(-\omega)$
- Page 51 : 2nd line below Eqn. (1.4.4) $v_0 \Rightarrow v_i^0$.
- Page 52 : 2nd line above Eqn. 1.4.12,
  "eqn. (1.4.11) are" $\Rightarrow$ "eqn. (1.4.10) are"
- Page 53 : Eqn. 1.4.22 the LHS is

$$\langle \frac{d}{dt} \mathrm{x}_i(t) \frac{d}{dt'} \mathrm{x}_i(t') \rangle$$

- Page 53 : Eqn. 1.4.23 in the RHS the factor $\frac{k_B T}{\zeta} \Rightarrow k_B T$.
- Page 53 : Below Eqn. 1.4.27 in line 3 and 4 all the $\bar{D}_0 \Rightarrow D_0$.
- Page 53: LHS of Eqn. 1.4.28, $\bar{D}_0 \Rightarrow D_0$
- Page 54 : Eqn. 1.4.27 the RHS $2\bar{D}_0(t - t_0) \Rightarrow 2D_0(t - t_0)$.
- Page 57 : The line above eqn. A1.3.5 should be

$$= \bar{D}_0 \frac{\mathrm{e}^{-\zeta(t+t')}}{2\zeta} \left[\theta(t-t')\{\mathrm{e}^{2\zeta t'} - \mathrm{e}^{2\zeta t_0}\} + \theta(t'-t)\{\mathrm{e}^{2\zeta t} - \mathrm{e}^{2\zeta t_0}\} \right]$$

- Page 57 : Each one of the last three lines of eqn. A1.3.6 has a overall factor of ζ^{-1} missing.
- Page 66: Eqn. (2.1.32) has negative sign on RHS
- Page 67: Eqn. (2.1.36) both has negative sign on RHS
- Page 110 : Second line below Eqn. (A2.3.5): "... direct correlation function of a liquid of density $\bar{n}_0(\mathbf{x})$."
- Page 118 : Eq. (3.1.1): Right hand side all terms within a bracket

$$\Delta G = \sum_i \Big[N_i \Delta G_i + k_B T \, [......] \Big]$$

- Page 121 : Below Eq. (3.1.20): "The maximum at $i = i^*$ in free ..."
- Page 133 : In Eqn. (3.2.10) "for $\psi > \psi_c$,"; and in Eqn. (3.2.11) "for $\psi < \psi_c$.
- Page 160 : In Eqn. (A3.1.1) left hand side is

$$\frac{1}{r^2} \frac{d}{dr} \left[r^2 \frac{d\mathcal{Y}}{dr} \right] = \alpha^2 \mathcal{Y} \ .$$

- Page 171: Eqn. (4.1.10) in the denominator $\prod_i N_i \Rightarrow \prod_i N_i!$
- Page 199: In Eqn. (4.4.9) and in the line above it, ψ and $\delta\rho$ have in their respective arguments $\mathbf{q}$ instead of $\mathbf{x}$. Thus $\psi(\mathbf{q}, t) \equiv \delta\rho(\mathbf{q}, t)\delta\rho(-\mathbf{q}, t)$.
- Page 218: In Eqn. (5.2.19) in the first equality there is no integral sign on the right hand side:

$$\eta_0 = \frac{\beta}{2} \lim_{\omega \to 0} \lim_{k \to 0} \frac{\omega^2}{k^2} G_T(k, \omega)$$

- Page 255: Eqn. (5.4.53) The RHS is

$$2 k_B T \delta_{ij} \delta(\mathbf{x} - \mathbf{x}') \delta(t - t') \Upsilon_0$$

- Page 261: Eqn. (A5.1.5) the right hand side is $\nabla_j \left[\Delta_{\alpha\beta} \Phi^{ij}_{\alpha\beta} \right]$.
- Page 261: Eqn. (A5.1.8) the right hand side has

$$\sum_j \nabla_j \left\{ ..... + \frac{1}{2} \sum_{\alpha\beta}{}' \Delta_{\alpha\beta} \left[(r_{\alpha\beta} \cdot F_{\alpha\beta}) \hat{r}^i_{\alpha\beta} \hat{r}^j_{\alpha\beta} \right] \right\}$$

- Page 305 : Below Eqn. (6.3.5) $g_{ij} = \sqrt{2 k_B T} \delta_{ij}$.
- Page 308 Eqn. (6.3.22) the second term in the square bracket has the last part as : $\tilde{U}(\mathbf{x} - \mathbf{x}') \hat{\rho}(\mathbf{x}', t)$
- Page 308 Eqn. (6.3.23) the RHS has last part as $\{\delta(\mathbf{x} - \mathbf{x}') \hat{\rho}_s(\mathbf{x}, t))$
- Page 308 line above Eqn. (6.3.24) "and momentum $\mathbf{p}_\alpha$ of the N-particle system ...
- Page 381: left hand side of Eqn. (8.1.89) $\Phi_s(q, z) = ..$"

- Page 386 : Line 10 from bottom, the expression for $\chi(t)$

$$\chi(t) = \langle|\delta\rho(k_m,t)\delta\rho(-k_m,0)|^2\rangle/\langle|\delta\rho(k_m)\delta\rho(-k_m)|^2\rangle$$

- Page 491 In Section (10.2.1) in the Eq. (10.2.1)-(10.2.6) the vector signs like $\vec{r}$ appears, instead of the notation of using bold face for vector $\mathbf{r}$, followed in the text in this Book.
- Page 431 In Eqn. (A.8.1.5) second equality for $\mathcal{I}_4$ is "$=-\frac{1}{2}\int d\mathbf{x}\int d\mathbf{x}'c(|\mathbf{x}-\mathbf{x}'|)$"
- Page 511 In the last paragraph the sentences starting from "It is straightforward to establish that at higher ...... the solution of eqns. (10.4.21)-(10.4.22)." should be deleted.
- Page 513 In the line above Eq. (10.4.33), the equation in the text is ", and $\mathcal{A}^{-1} = a_1\mathbf{I} + a_2\mathbf{E}$, the following ..." .
- Page 513 Eqn. (10.4.34) right hand side should have both sign positive

$$... = \left[\frac{a_2}{a_1+a_2}\right] + \ln\left[\frac{a_1}{a_1+a_2}\right]$$

- Page 514 In the line above Eq. (10.4.37), the equation in the text is ", and $\Delta_s(x) = -x - \ln(1-x)$ and the function Φ_1 is ....
- Page 514: Eqn. (10.4.38) second term on the right hand side $..r_0\phi^2(x) + \frac{u}{2}\phi^4(x)\Big\}..$
- Page 518 Eqn. (10.4.62) right hand side has the form :

$$... = -x - \ln(1-x)\ .$$

- Page 541 The reference beginning "Bengtzelius ... " last author is "A. Sjőlander"
- Page 544 : In the last two references under Das, *i,e,* in Das 1999 and Das 2004, in the author name "and R. Schilling" should be dropped.
- Page 547 : 3rd Reference : Goldstein, M., 1969, J. Chem. Phys. **51**, 3728.
- Page 550: Ref. Loh, K., K. Kawasaki, A.R.Bishop, ...