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Erratum: Foam analogy in charged colloidal crystals [Phys. Rev. E 65, 050401(R) (2002)]

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In our paper, the elastic constants K_{11} and K_{12} were calculated using an inconsistent expression for the bulk modulus. The expression for K below Eq. (4) should read $K = \frac{1}{3}(K_{11} + K_{12})$ [not $K = (K_{11} + 2K_{12})/3$]. For a 12% volume-fraction (n = 0.23) bcc sample, the correct values of the two elastic constants are $K_{11} \approx 16.7 \text{ N/m}^2$, $K_{12} \approx -2 \text{ N/m}^2$, while the value of K_{44} and the shear modulus range remain unchanged.

A new table (Table I) with correct values of K_{11} and K_{12} follows.

Since the directly measurable shear moduli and bulk moduli are unchanged, the errors in K_{11} and K_{12} do not affect our conclusions or comparison with experiment.

TABLE I. Calculated values for the bulk modulus K and elastic constants of the bcc structure at several values of $\lambda = \kappa a$, where a is the average interparticle spacing, for n = 0.23 (first number) and n = 0.50 (second number). All values are in units of N/m².

λ	K	K_{11}	K_{12}	K_{44}
1	-26.1 -7.59	1.53 5.13	-79.8 -27.8	54.4 28.4
2	-7.54 13.8	12.0 22.3	-35.2 19.3	29.1 15.6
3	0.12 22.3	16.5 29.0	-16.1 37.8	18.3 10.6
4	3.66 26.2	17.2 31.7	-6.18 46.7	12.7 7.95
5	5.37 28.0	16.5 32.7	-0.37 51.2	9.40 6.40
6	6.16 28.6	15.2 32.6	3.33 53.3	7.30 5.43
7	6.46 28.7	11.4 31.9	5.67 54.2	5.90 4.70
8	6.49 28.5	9.13 31.2	7.37 54.3	5.00 4.30

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