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Corrigendum

A new type of solution of the Schrödinger equation on a self-similar fractal potential
N L Chuprikov and O V Spiridonova 2006 *J. Phys. A: Math. Gen.* **39** L559

There is an error in the original figures 1 and 2, presenting the function $\ln(R(\phi)/T(\phi))$. Figures 1–7 present renewed and extended results for this function. Its behavior in the middle region is now more complex than in the original presentation.

Figures 1–6 show this function for three values of ω (1, 10 and 15) and three values of c (0.001, 0.01 and 0.1). Now, in the middle region, two qualitatively different types of changing $\ln(R(\phi)/T(\phi))$ occur. Namely, for $\omega = 1$ and all three values of c (see figures 1 and 2)

$$\ln(R/T) \sim -2s\ln(\phi).$$

Such behavior also occurs for $\omega = 10$ and $c = 0.001$ (see figures 3 and 4). At the same time, for $\omega = 15$ and all three values of c (see figures 5 and 6), as well as for $\omega = 10$ and $c = 0.1$ (see figures 3 and 4), we have

$$\ln(R/T) \sim -2\ln(\phi).$$

Figure 7 is added to show the function $R(\phi)/T(\phi)$ for the case when ω depends on ϕ.

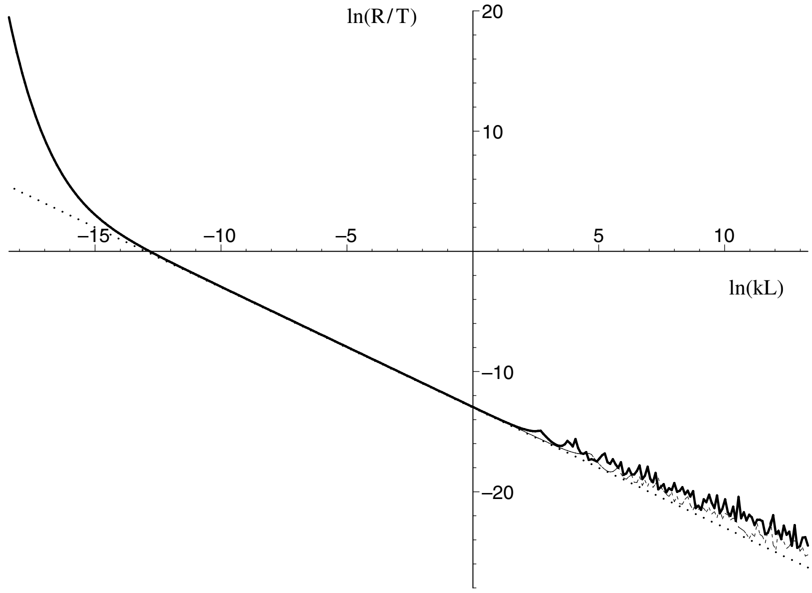

Figure 1. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $s = 0.5$, $c = 0.001$ and $\omega = 1$; bold full curve: $N = 2$; thin full curve: $N = 4$; points show the asymptote $13 - 2s\ln(\phi)$.

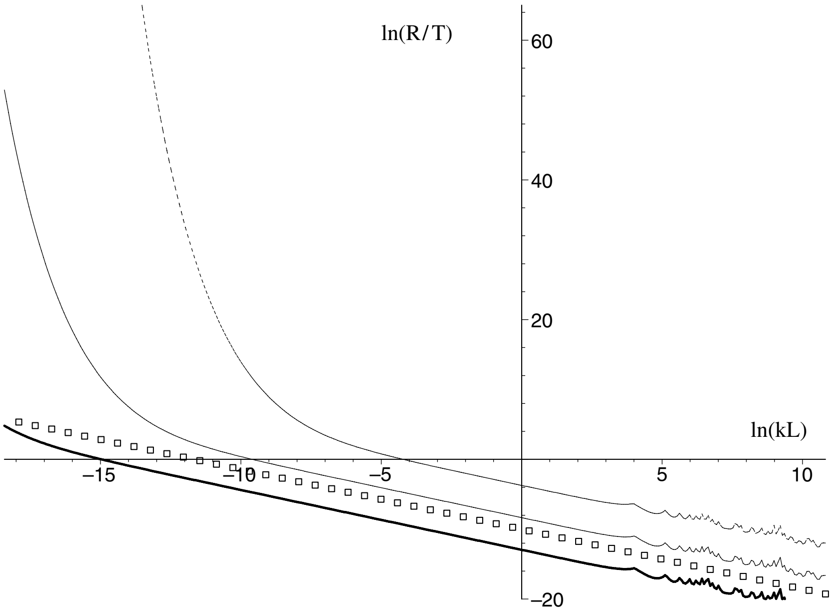

Figure 2. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $N = 3, \alpha = 13$ and $\omega = 1$; broken curve: $c = 0.1$; thin full curve: $c = 0.01$; bold full curve: $c = 0.001$; circles show the asymptote $10 - 2s\ln(\phi)$.

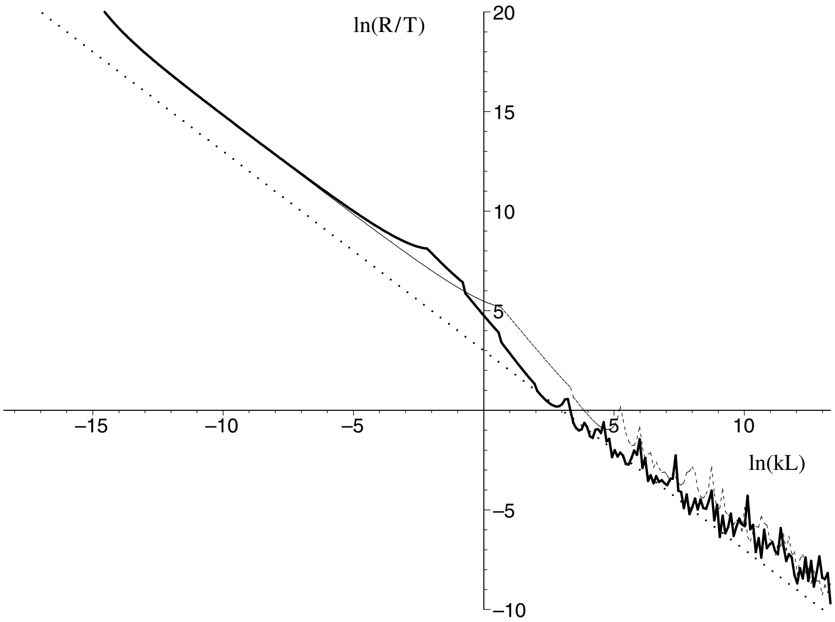

Figure 3. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $s = 0.5$, $c = 0.001$ and $\omega = 10$; bold full curve: $N = 2$; thin full curve: $N = 4$; points show the asymptote $3 - 2s\ln(\phi)$.

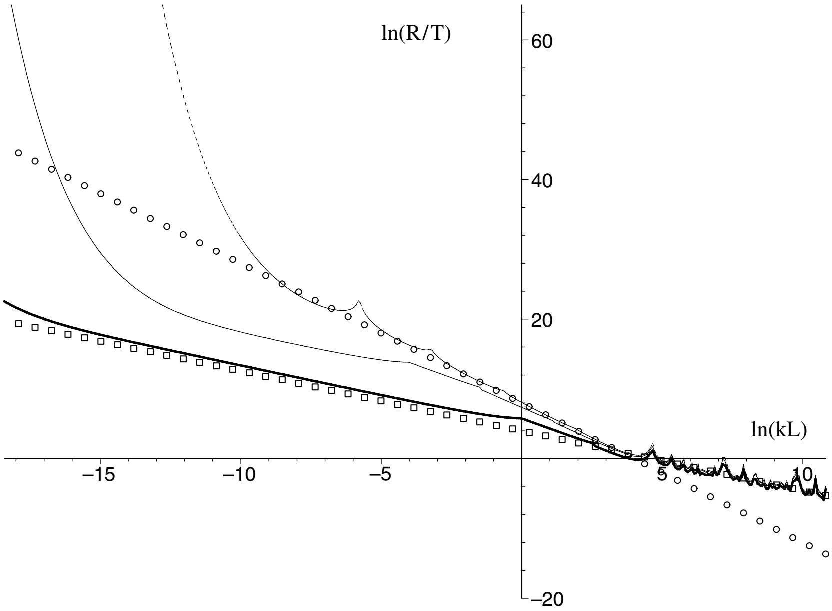

Figure 4. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $N = 3, \alpha = 13$ and $\omega = 10$; broken curve: $c = 0.1$; thin full curve: $c = 0.01$; bold full curve: $c = 0.001$; points show the asymptote $8 - 2\ln(\phi)$; circles show the asymptote $4 - 2s\ln(\phi)$.

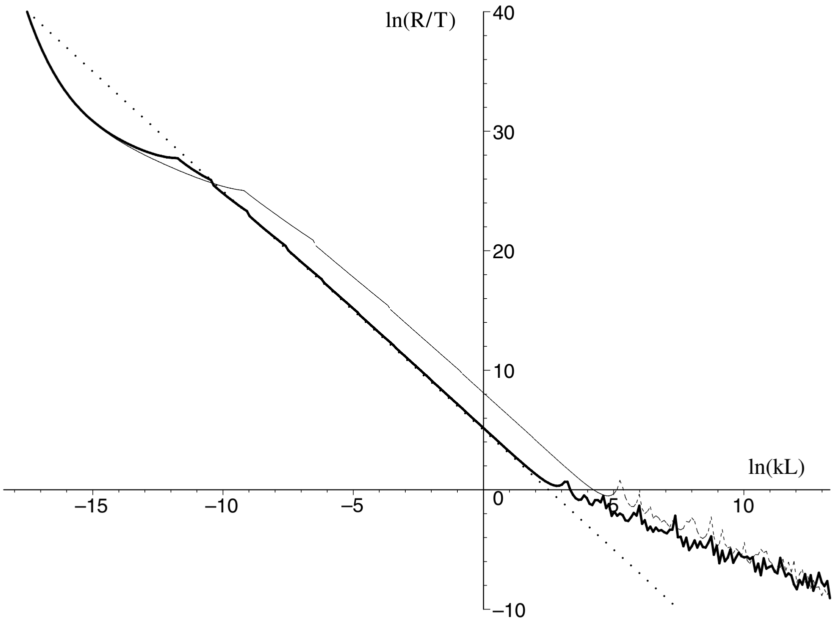

Figure 5. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $s = 0.5$, $c = 0.001$ and $\omega = 15$; bold full curve: $N = 2$; thin full curve: $N = 4$; points show the asymptote $5 - 2\ln(\phi)$.

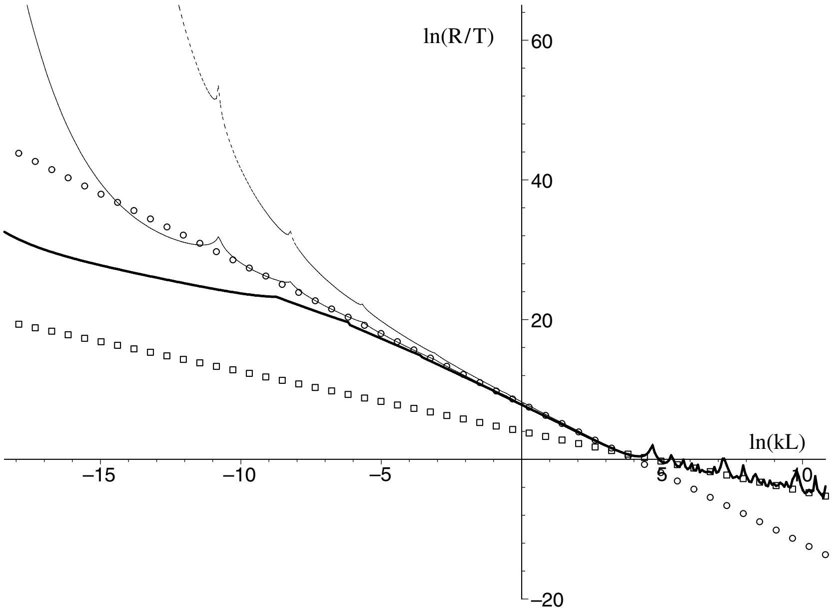

Figure 6. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $N = 3, \alpha = 13$ and $\omega = 15$; broken curve: $c = 0.1$; thin full curve: $c = 0.01$; bold full curve: $c = 0.001$; points show the asymptote $8 - 2\ln(\phi)$; circles show the asymptote $4 - 2s\ln(\phi)$.

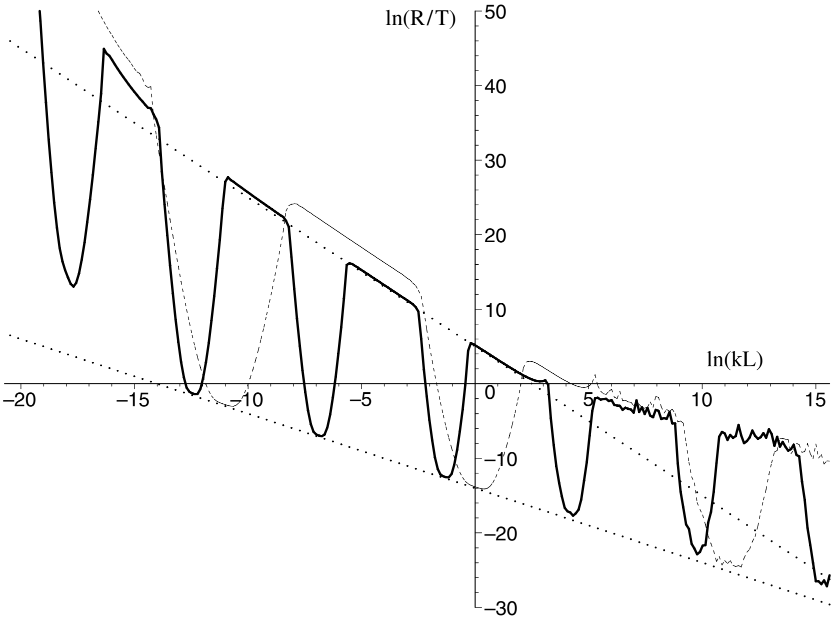

Figure 7. The $\ln(\phi)$-dependence of $\ln(R/T)$ for $s = 0.5, c = 0.001$ and $\omega = 15[\sin(2\pi \frac{\ln(\phi)}{\ln(\alpha)}) + 1.001]$; bold full curve: $N = 2$; thin full curve: $N = 4$; points show the asymptotes $5 - 2\ln(\phi)$ and $14 - 2s\ln(\phi)$.