Andrade *et al.* Reply: In the preceding Comment [1], Levin and Pakter (LP) present a solution for mechanical equilibrium of a system of particles interacting through a modified Bessel potential, and confined by a restoring force. Based on this result, LP raise several points on our recent Letter [2]. In what follows, we show that none of these points has any relevance to our previous work.

LP claim that their solution is exact without fitting parameters. Their solution, however, is an approximation that disregards the discrete nature of the pointlike particles. This solution is adequate only in the limit of high densities, where, as stated in our Letter, our coarse-graining parameter should converge to $a = \pi f_0 \lambda^3$. The absence of a fitting parameter is only justified because the results shown in their Comment correspond to a confining potential that is 1000 times stronger than the value utilized in our study. In this case, the obtained densities can reach 5 particles per λ^2, which is about 10 times higher than ours. At the moderate densities we studied, however, the numerical results do not follow this prediction, as shown in Fig. 1(a). In order to adjust the concavity of the theoretical profile to the numerical data, we proposed that a slightly smaller effective value should be used, $a = 2.41 f_0 \lambda^3$.

The approximation proposed by LP shows a discontinuity, with the density going abruptly to zero at the edge of the profile. This discrepancy from our results is due to the fact that, under the conditions used by LP, all particles are restricted to a narrow region in space that corresponds to only a few units of the interaction length λ, as depicted in Fig. 1 of their Comment. One should note that the numerical results of LP do not show clear evidence for the presence of the discontinuity, even at this regime. To demonstrate that this feature of LP's solution is not relevant in less confined systems, in Fig. 1(b) we show that, as the number of particles grows, the scaled profiles converge asymptotically to an invariant parabolic form, and the discontinuity gradually diminishes. Therefore, the discontinuity predicted by LP is an edge effect that becomes negligible if the particles are not confined to a narrow region.

Finally, LP question our interpretation that a system of overdamped particles at $T = 0$ is a physical realization of Tsallis thermostatics. In our approach, all the particle-particle interactions of the system, as long as they are short range and repulsive, are coarse grained to the parameter a, and included into a Tsallis entropic term with $\nu = 2$. For $T > 0$, this means that we map the problem of a nonideal gas of particles into an ideal gas with an entropy that carries both Boltzmann-Gibbs and Tsallis contributions [3].

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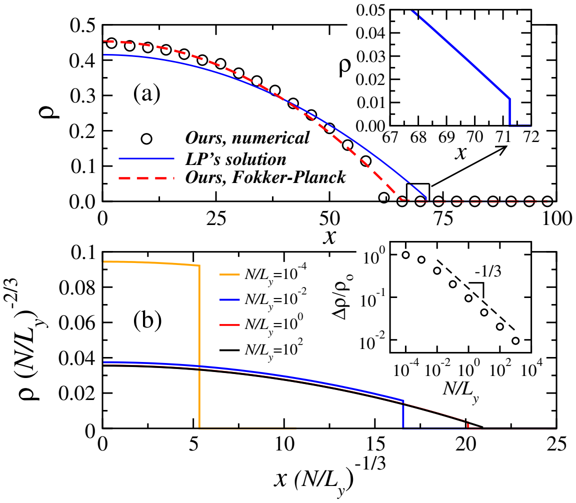

FIG. 1 (color online). (a) Results for the density profile obtained from numerical simulations. We used the same conditions as Fig. 1 of our Letter, namely, $N = 800$, $\alpha = 10^{-3} f_0$, and $L_y = 20\lambda$. The dashed line is the solution given by Eq. (14) of our Letter with $a = 2.41 f_0 \lambda^3$, while the solid line corresponds to Eq. (3) from LP's Comment. Clearly their solution is not compatible with the concavity of the density profile obtained from our molecular dynamics simulations. The inset shows that the discontinuity is barely noticeable for these physical conditions. (b) LP's solution for a different number of particles. We use here $\alpha = 10^{-3} f_0$ and vary N/L_y. As $N/L_y \to \infty$, the rescaling shows an invariant parabolic profile with $a^{-2/3}\rho(a^{-1/3}x, aN/L_y) = \rho(x, N/L_y)$. The inset shows that the relative magnitude of the discontinuity decreases as $\Delta\rho/\rho_0 \sim (N/L_y)^{-1/3}$.

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