Yang *et al.* Reply: In the preceding Comment, Bryk, Mryglod, Ruocco, and Scopigno (BMRS) discuss an issue of secondary importance and propose [1] that relaxation time τ in our equation for the k gap $k_g = 1/2c\tau$ in our recent Letter [2] should not be the single-particle Frenkel relaxation time τ_F but the Maxwell relaxation time $\tau_M = \eta/G_\infty$ instead. This proposition misses the point and misrepresents our discussion. We referred to τ as Frenkel's relaxation time in order to signify Frenkel's original proposal that at the microscopic level τ is the average time between particle jumps [3]. However, what really matters is not what τ is called but (a) what τ corresponds to in our theoretical derivation and (b) how we calculate τ in the molecular dynamics simulation.

We have clearly stated on page 2 of our Letter [2] that k_g originates from our solving the Navier-Stokes equation generalized by Frenkel to include liquid elastic response and cited in our earlier paper [4]. A quick inspection of equations in Ref. [4] [see Eqs. (29)–(34) and the definition of $\tau = \eta/G_\infty$ in Eq. (29)] shows that τ in k_g is Maxwell relaxation time $\tau_M = \eta/G_\infty$. This is in direct contrast to the BMRS assumption.

BMRS further assume that we have used τ_F to evaluate the gap. This is not the case: we have clearly stated in the Supplemental Material of [2] that τ was calculated from the decay of the intermediate scattering function as is widely done [5–8]. BMRS have acknowledged this fact during our editorial communication, yet they still calculate τ_F according to their own method which is clearly different from ours. Not unexpectedly, BMRS find a different τ. In view of this, the calculation and the Comment of Bryk *et al.* are irrelevant.

We make three further comments. BMRS assume that τ_M and τ_F are essentially different but fail to note that both τ are well known to be physically related (different τ are approximately proportional to each other [7], implying their relationship and that $k_g \propto 1/\tau$, the main result of our Letter, holds). Since Frenkel has provided a microscopic picture of τ_M as the time between particle jumps [3], this picture has become widely accepted since [9,10]. However, there are several methods to calculate microscopic τ_F which may return somewhat different τ_F. It is well known that τ_F is similar to τ calculated from the decay of the intermediate scattering function if the appropriate displacement cutoff is chosen for the calculation of τ_F [6]. Unfortunately, BMRS choose to use only one possible cutoff to calculate τ_F. Had they chosen an appropriate cutoff as proposed in Ref. [6], they would have found τ_F close to τ calculated from the intermediate scattering function or τ_M. Similarly, BMRS' conclusion that τ_F is "inconsistent" with τ_M contradicts other well-known results. One method to calculate τ_F is based on the time needed by an atom to gain or lose a neighbour and returns τ_F very close to τ_M [7]. BMRS fail to mention this result, albeit they cite Ref. [7].

BMRS use G_∞ to calculate τ_M; however, it is well known that G_∞ is substantially different from shear modulus at finite high frequency that needs to be used (see, e.g., Ref. [11] and Fig. 6 in Ref. [9]). Using the values of ρ and G_∞ stated by BMRS, the shear velocity, $\sqrt{G\infty/\rho}$ [9,12], is about 1300 m/s and is substantially larger than the velocity from the dispersion curve. Since $G \propto c^2$, the overestimation of G to be used to calculate τ_M by BMRS is even more significant.

We finally comment on giving credit and citing previous work. We have cited the original result of the k gap [13] in our paper [2]. BMRS do not cite the original result but later work including Bryk *et al.* papers. Although we cited that work in our Letter, we did not discuss it in detail because it is erroneous in places. The gap in Ref. [14] is given as $k_g = (\rho G/4\eta)^{\frac{1}{2}}$ [see Eq. (24)], which does not have the correct dimensionality of the inverse meter.

C. Yang,[1] M. T. Dove,[1] V. V. Brazhkin[2] and K. Trachenko[1]
[1]School of Physics and Astronomy
Queen Mary University of London
Mile End Road, London E1 4NS, United Kingdom
[2]Institute for High Pressure Physics
RAS, 108840 Troitsk, Moscow, Russia

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