Menon, Nagel, and Venerus Reply: Our Letter [1] presented a unified measurement of all the quantities required to assess deviations from the Stokes-Einstein law in a highly viscous liquid, di-n-butylphthalate (DBP). We showed these deviations are small and continuous and therefore do not define a critical temperature or an onset of collective dynamics. Behrens *et al.* [2] do not contest these results; they disagree with our explanation of the source of these deviations in terms of a relaxation spectrum with a smooth temperature dependence.

In contrast to Ref. [2] our measurements were made on a conventional rheometer in a simple, well-controlled, parallel-plate geometry with which we covered a range of 10^2 to 2×10^{11} P in viscosity η and 1.6×10^{-4} to 1.6×10^1 Hz in frequency. We found the shape of $G(\nu)$ to be temperature dependent and thus different from the data of Ref. [2]. This is evident in Fig. 1, where we plot $G''(\nu)/G_\infty$ against ν/ν_p for three temperatures [ν_p is the frequency of the peak in $G''(\nu)$]. For $\nu < \nu_p$ the data collapse, showing that $G(\nu \to 0) = i2\pi\nu\eta$ at all T (as analyticity requires). However, the frequency dependence for $\nu > \nu_p$ changes with T, thereby invalidating the assumption of a time-temperature superposition "principle." The departure from superposition is not due to the β relaxation which our dielectric measurements of DBP show to be far away from our temperature-frequency window. We characterized the shape of $G(\nu)$ using a Cole-Davidson fit which Fig. 1 shows to be adequate over the range of our data.

The failure of time-temperature superposition is common in supercooled viscous organic liquids. In experiments that allow a wide- frequency range it is typical rather than exceptional to observe a T-dependent spectrum. Examples are seen in measurements of shear relaxation [3] longitudinal modulus [4], light scattering [5], dielectric susceptibility [6,7], and specific heat [6]. In polymers near their glass transition, mechanical measurements [8] similar to ours have shown T-dependent relaxation time distributions. For the particular case of DBP the width of the dielectric relaxation is T dependent [6]. In Ref. [3] and in other cases where the modulus has been measured because the susceptibility has a pole at $\nu = 0$, e.g., the electrical modulus of ionic glass formers [9], many examples may be found of the modulus growing wider with increasing T, as we reported.

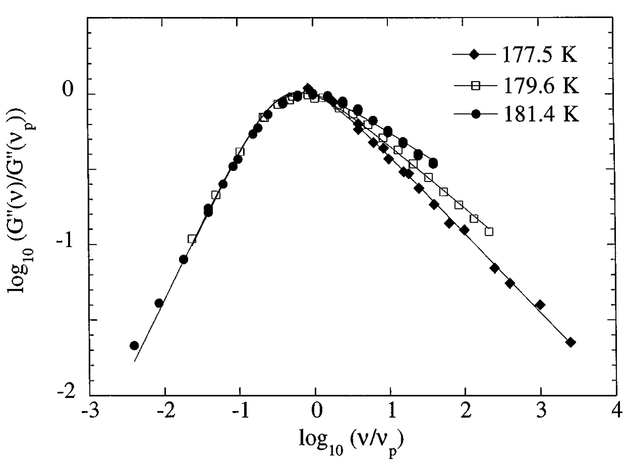

FIG. 1. $G''(\nu)/G''(\nu_p)$ vs ν/ν_p for DBP at three temperatures. The data do not overlap for $\nu/\nu_p > 1$. The lines are fits to the function $G(\nu) = G_\infty[1 - 1/(1 + i2\pi\nu\tau)^\beta]$.

As regards the T dependence of G_∞, we plotted the quantity G_∞/T to show that it does not contribute substantially to the ratio $2\pi\eta\nu_p/T$ that quantifies deviations from the Debye-Einstein equation. We *stated explicitly that this did not* establish that G_∞ has a linear T dependence.

In summary, our data demonstrate that relaxation processes do not decouple in DBP. Deviations from the Einstein relations are small and are explained by a smooth change of the relaxation spectrum with temperature.

Narayanan Menon and Sidney R. Nagel
The James Franck Institute
University of Chicago
Chicago, Illinois 60637

D. C. Venerus
Department of Chemical Engineering
Illinois Institute of Technology
Chicago, Illinois 60616

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