Russina *et al.* Reply: We essentially agree with the two alternatives given at the beginning of the Comment [1], but they need to be made more precise. Namely, in view of the momentum transfer q range in our experiment [2] the atomic displacements in case (i) of Ref. [1] need only to be larger than a few Å; there is no need to envisage "nanometers." Furthermore, the modes evoked in model (ii) of Ref. [1] must be local, nonpropagating modes and cannot be just sound waves, which would actually also fit the definition given. Thus mechanism (ii) also is of an inhomogeneous nature, as our model in Ref. [2] is. The basic difference between the two interpretations is that for the atoms concerned model (ii) assumes equilibrium positions long lived compared to the frequency of the mode, while in the case of type (i) the motion observed is the displacement of the quasiequilibrium positions themselves.

We agree that a case-(ii)–type mechanism proposed in Ref. [3] is, in principle, a possible explanation for the kind of behavior observed, and it may well indeed apply for polybutadiene, as argued in Ref. [1]. However, to the contrary of polybutadiene, our sample Ca-K-NO_3 (CKN) is not a network glass but a rather low viscosity ionic melt, and thus it is unlikely that it can support large volume local defect modes. Correlated motion of groups of atoms can rather be expected to be of the type of case (i), stringlike motion of chains of ions, following each other while roughly maintaining density and charge neutrality, as we have suggested on the basis of molecular dynamics simulation results discussed in our paper [2].

Another evidence in our case of CKN is that the characteristic shape of the inelastic spectra shown in our Fig. 3 of Ref. [2] applies to the whole q range studied. This lends strong support to our approach of interpreting the extra intensity by a single, case-(i)–type process at all q's; cf. Fig. 4 in Ref. [2]. The mechanism proposed in Ref. [3] contributes to the dynamic structure factor in the q range of these studies by an approximately q independent term, so one needs another, additional mechanism to explain the picosecond process in the $q \geq 1$ Å^{-1} range.

M. Russina,[1] F. Mezei,[1,2] R. Lechner,[2]
S. Longeville,[2] and B. Urban[2]
[1]Los Alamos National Laboratory
MS H805
Los Alamos, New Mexico 87545
[2]Hahn-Meitner-Institut
Glienicker Strasse 100
14190 Berlin, Germany

Received 28 August 2000
PACS numbers: 61.43.Fs, 61.12.–q, 61.20.Lc, 64.70.Pf

[1] W. Schmidt, M. Ohl, and U. Buchenau, preceding Comment, Phys. Rev. Lett. **85**, 5669 (2000).
[2] M. Russina, F. Mezei, and R. Lechner, and S. Longeville, and B. Urban, Phys. Rev. Lett. **84**, 3630 (2000).
[3] U. Buchenau, A. Wischnewski, M. Monkenbusch, and W. Schmidt, Philos. Mag. B **79**, 2021 (1999).

 0031-9007/00/85(26)/5670(1)$15.00