Benassi *et al.* Reply Longitudinal collective modes associated to density fluctuations are thought to have a propagating nature whenever there exists a linear relations between their excitation energy (i.e., their frequency Ω) and their momentum (i.e., their wave vector Q): $\Omega = vQ$. The proportionality constant v is the propagation velocity, generally referred to as the speed of sound [1].

Recently we reported an inelastic x-ray scattering (IXS) [2] study on the high frequency collective dynamics of vitreous silica (v-SiO_2). There, the IXS spectra show inelastically scattered intensity strongly dispersing with momentum transfer (Q) in the 1–4 nm^{-1} range. At each Q value, the shape of the inelastic signal was successfully summarized by an energy position Ω and a linewidth Γ extracted using a damped harmonic oscillator (DHO) line shape. This data analysis gives a linear dispersion for Ω, $\Omega(Q) = vQ$, and a quadratic dispersion for Γ, $\Gamma(Q) = dQ^2$. On the basis of the previous definition of propagation, and on the derived linear relation $\Omega = vQ$, this collective mode was recognized to be *propagating* in the whole considered Q region. The corresponding energy region extends up to ≈15 meV, a value well above the Boson peak energy of ≈4–6 meV. We concluded, therefore, that these propagating modes contribute to the Boson peak found in *incoherent* scattering measurements.

As it was extensively repeated, we did not want to give a special physical meaning to the DHO model, although it is more appropriate than other symmetric line shapes as the linewidth approaches the peak energy value. The DHO was chosen only to extract spectroscopic shape parameters without the bias of imposing theories. Similar results are also obtained using other line shapes as Gaussians and Lorentzians.

In the present Comment [3] we learn that another line shape can also fit our IXS data with an appropriate choice of the parameters. Among them, there is the crossover frequency ω_{co} that should mark the transition from propagation to localization. In this context, a localized mode must have a basically Q independent energy, according to the definition of localization given by the authors of the present Comment in their previous work [4]. The derived value, $\omega_{co} \approx 4$ meV, leads the authors of the Comment to propose that the modes become localized already at $Q_{co} \approx 1\ nm^{-1}$.

As the authors of the Comment explicitly recognize, however, also with their model one finds a linear dispersion of the measured excitations in the whole Q region where an excitation can be observed, i.e., up to energies more than 3 times larger than the derived crossover frequency ω_{co}. This dispersion gives again for the peak energy a relation $\Omega(Q) = vQ$, with v corresponding to the speed of sound in the $Q = 0$ limit. Consequently, according to the definition of propagation reported at the beginning of this Reply, and to the definition of localization given by the authors of the Comment elsewhere [4], there is a marked contradiction among the objective existence of a linear dispersion in the whole considered data set, and the localization of the acoustic modes above 1 nm^{-1} proposed by the authors of the Comment.

In conclusion, we disagree with an interpretation that neglects a dispersion directly observable in the raw data, and gives excessive emphasis to a specific theory in the attempt to demonstrate that the collective dynamics in v-SiO_2 become localized at wavelengths of $2\pi/Q_{co} \approx$ 6 nm.

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[1] See, for example, the recent discussion in J. Fabian and P. B. Allen, Phys. Rev. Lett. **77**, 3839 (1996).
[2] P. Benassi *et al.*, Phys. Rev. Lett. **77**, 3835 (1996).
[3] M. Foret *et al.*, preceding Comment, Phys. Rev. Lett. **78**, 4669 (1997).
[4] M. Foret *et al.*, Phys. Rev. Lett. **77**, 3831 (1996).

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