Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Temperature Divergence of the Dynamics of a PVAc glass: Dielectric vs. Mechanical Behaviors[1] GREGORY MCKENNA, JING ZHAO, Texas Tech University — The dynamics of glass forming liquids as the glass transition is traversed has become of special interest because of the continuing question as to whether or not these dynamics diverge towards an ideal glass transition/Kauzmann temperature or if the apparent Vogel-Fulcher divergence is lost as one goes below the conventional T_g but remains in equilibrium. Here we examine the response of a PVAc polymer glass-former using both dielectric and mechanical methods in the vicinity of T_g. Isothermal measurements were performed to study the aging behavior of PVAc and to assure that the equilibrium state was achieved and for temperatures to as much as 15 ^{o}C below the T_g. Surprisingly, we found that the mechanical response took much longer to age into equilibrium than did the dielectric response. Also, although the dielectric and mechanical responses seem to probe the glassy dispersion, the temperature dependence of the time-temperature shift factors obtained from the two methods are different and the dielectric measurement response shows a turnover to Arrhenius behavior rather than a continuation of the VFT divergence at the lowest temperatures tested.

[1]The authors thank the National Science Foundation under grant DMR-0804438 for support of this project.

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Date submitted: 10 Nov 2011 Electronic form version 1.4