

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Prediction of the Viscoelastic Bulk Modulus** JIAXI GUO, SINDEE SIMON, Texas Tech University — The bulk and shear viscoelastic responses for several materials appear to arise from the same molecular mechanisms at short times, i.e., Andrade creep where the KWW beta parameter is approximately 0.3. If this is indeed the case, prediction and placement of the bulk viscoelastic response can be made simply by knowing the limiting elastic and rubbery bulk moduli and the viscoelastic shear response. The proposed methodology, which uses only easily measured functions, is considerably less time- and labor-intensive than direct measurement of the viscoelastic bulk modulus. Here we investigate this hypothesis and compare the calculated viscoelastic bulk responses for several materials to existing data in the literature.

Jiayi Guo  
Texas Tech University

Date submitted: 03 Dec 2009

Electronic form version 1.4