224. Title: Brillouin light scattering study of polymeric glassy sulfur

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Abstract: We present here a study of the acoustic dynamics of polymeric glassy sulfur. The data have been collected in the GHz frequency range by means of Brillouin light scattering for different scattering geometries. The choice of the experimental setup allows us to obtain information on the refractive index, n, that comes out to be close to that corresponding to the high temperature polymeric liquid phase. The longitudinal acoustic excitations have been investigated as a function of temperature from deep into the glassy state up to the glass transition temperature. The temperature dependence of the sound velocity is compared to the one measured in the liquid phase. We find that the sound velocity of the glass can be linearly extrapolated from that of the polymeric liquid measured in the THz frequency range with inelastic X-ray scattering.