Triangular Relations in Structural Glasses KARINA E. AVILA, HO-
RACIO E. CASTILLO, AZITA PARSAEIAN, Ohio University — Structural glasses
exhibit the phenomenon of dynamical heterogeneity: different regions of the system
present different dynamical behavior. To study this phenomenon, we analyze sim-
ulations of four models of structural glasses performed in the aging regime. We
compute the triangular relations of the local and global two-time correlation func-
tions, i.e., the mathematical relationships among correlators calculated for the time
pairs (t1,t2), (t2,t3) and (t1,t3) with t1> t2> t3. We plot the triangular rela-
tions of the global and local correlations together to compare their behavior. We
find that the probability distribution of local correlations is concentrated along the
curve representing the global correlations. Our results provide evidence of time
reparametrization invariance and also point toward universality in the aging.

Karina E. Avila
Ohio University

Date submitted: 17 Nov 2009   Electronic form version 1.4