

Abstract Submitted
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Emergence of rigidity at the dynamic glass transition: a replica approach calculation¹ GRZEGORZ SZAMEL, ELIJAH FLENNER, Department of Chemistry, Colorado State University — According to the mean-field replica theory of the glass transition, at the so-called dynamic transition the relaxation stops and the liquid freezes into one of many metastable states. We identify Goldstone modes of the resulting amorphous solid and derive a formal expression for its shear modulus. This expression is complementary to the formula used by Yoshino and Mezard [Phys. Rev. Lett. **105**, 015504 (2010)]. We combine our formal expression with the recently proposed version of the replica approach [G. Szamel, Europhys. Lett. **91**, 56004 (2010)] to calculate the shear modulus.

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