

Abstract Submitted
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A percolation model for dynamics in glass-forming materials

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— We characterize the glass to liquid transition as a percolation of mobile regions in configuration space. We find that many hallmarks of glassy dynamics, for example stretched-exponential response functions and a diverging structural relaxation time, result from critical properties of mean-field percolation. Specific predictions of the percolation model include the range of possible stretching exponents $1/3 \leq \beta \leq 1$ and the functional dependence of the alpha relaxation time and stretching exponent on temperature, density, wave number, and entropy.

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