Thermodynamics-Structure-Dynamics Correlations and Nonuniversal Effects in the Elastically Collective Activated Hopping Theory of Glass-Forming Liquids

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Additional results relevant to discussions in the main text.

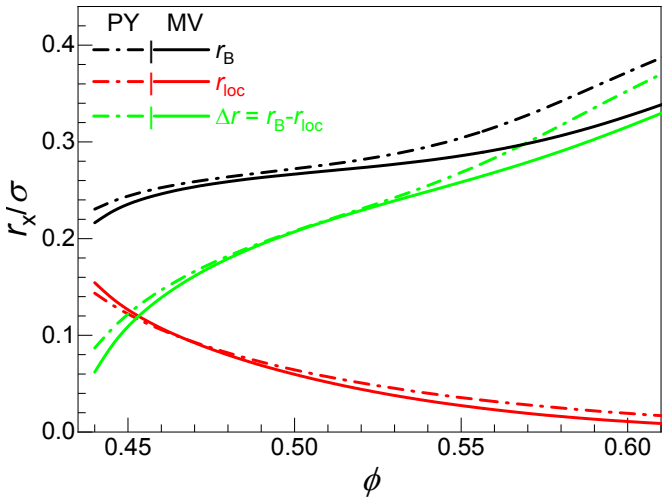

Figure S1. Localization length (red), barrier location (black), and particle jump distance (green) in units of the hard sphere diameter as a function of packing fraction based on PY (dash-dot) and MV (solid) structural inputs.

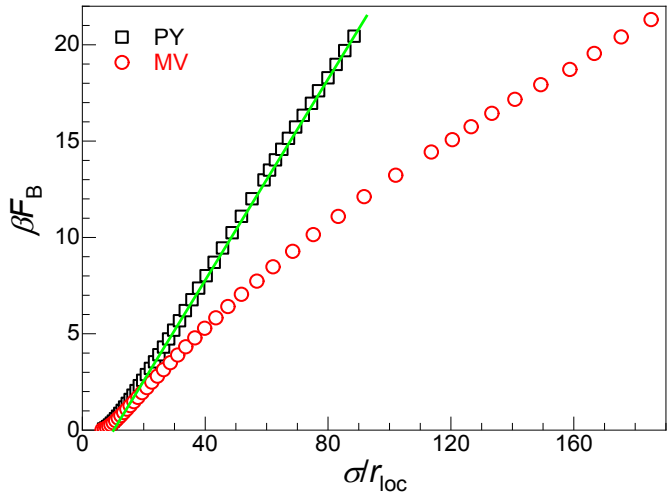

Figure S2. Local cage barrier in thermal energy units versus dimensionless inverse dynamic localization length based on PY (black) and MV (red) inputs.

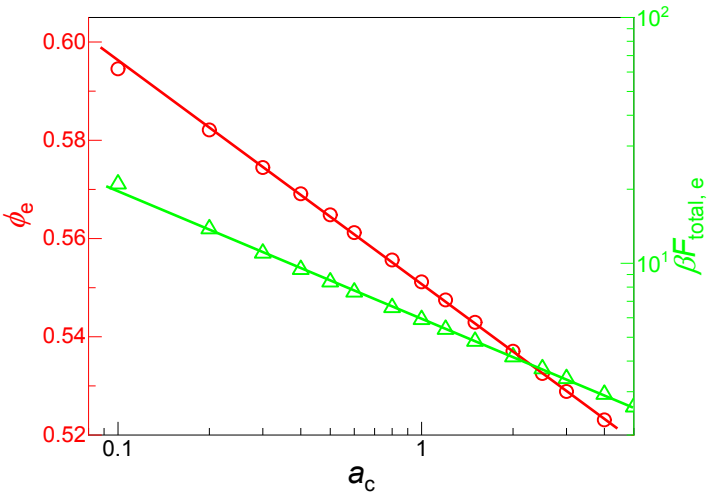

Figure S3. Dependence of the packing fraction ϕ_e (red) and corresponding total barrier $\beta F_{total,e}$ (green) at the dynamic crossover when the collective elastic barrier equals 1 $k_B T$. The straight lines are exponential (red) and power law (green) fits given by : $a_c \sim \exp(-50.53\phi_e)$ and $\beta F_{total,e} \sim a_c^{-0.52}$.

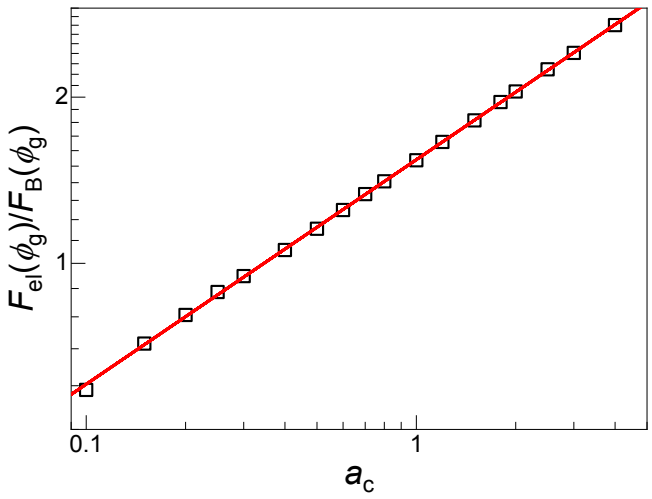

Figure S4. Ratio of the collective elastic to local cage barriers *at* kinetic vitrification (total barrier of 32) as a function of a_c based on MV structural input. The straight line corresponds to the power law fit: $F_{el}(\phi_g)/F_B(\phi_g) = 1.54 a_c^{0.41}$.