Thermodynamic glass transition of a randomly pinned glass-former

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Confirming by experiments or simulations whether or not an ideal glass transition really exists is a daunting task, because at this point the equilibration time becomes astronomically large. Recently it has been proposed that this difficulty can be bypassed by pinning a fraction of the particles in the glass-forming system. Here we study numerically a liquid with such random pinned particles and identify the ideal glass transition point TK at which the configurational entropy vanishes, thus realizing for the first time, to our knowledge, a glass with zero entropy.