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Correlated Single Particle Jumps In a Glass ELIZABETH A. BAKER, Bucknell University, KATHARINA VOLLMAYR-LEE, Bucknell University — We study a three-dimensional Binary Lennard-Jones Glass below the glass transition. To study the dynamics we focus on events when a particle jumps out of its cage formed by its neighboring particles. We distinguish between irreversible jumps, where a particle successfully escapes its cage, and reversible jumps, where a particle returns to one of its previous cages within the time of the simulation. To investigate the spatial correlation of jumping particles we identify clusters of jumping particles. For differrent temperatures T below the glass transition, the clusters are analyzed by size, $s(T)$; coordination number, $z(T)$; and its distribution, $P(z)$. When the jumping particles of the whole simulation run are analyzed the main temperature dependence of s and z is due to the increasing numbers of jumping particles with increasing temperature. To take time correlations into account, we also analyze clusters of particles which jump at the same time. We find for high temperatures that the irreversibly jumping particles form string-like clusters. We also find that aging is present because most jumps occur in the first tenth of the simulation run.

☐ Prefer Oral Session
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