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Particle Jumps in SiO₂: A Computer Simulation¹

ROBIN BJORKQUIST, Reed College, KATHARINA VOLLMAYR-LEE, Bucknell University, JUERGEN HORBACH, DLR, Koeln, Germany — We use molecular dynamics simulations to investigate the aging dynamics of SiO₂ modeled by the BKS potential. The system is well equilibrated at temperature T_{high} and then quenched to T_{low} . We characterize the dynamics by means of jumps in single-particle trajectories and measure the number of jump events, the number of jumping particles, and jump size. All measured quantities increase with increasing T_{low} and decrease with increasing waiting time. For the largest investigated temperatures T_{low} and for long enough waiting times the system reaches equilibrium and all measured quantities become independent of T_{high} and waiting time.

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- Prefer Oral Session
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