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Scaled Nucleation in a Lennard-Jones System BARBARA HALE, TOM MAHLER, University of Missouri-Rolla, JERRY KIEFER, St. Bonaventure University — Scaling of the vapor-to-liquid nucleation rate, J , is examined in a model Lennard-Jones system using Monte Carlo derived rate constant ratios for growth and decay of small clusters. The model assumes a dilute vapor system of non-interacting clusters and the steady-state nucleation rate formalism expressed as a summation over products of rate constant ratios. The nucleation rates so obtained are examined in a scaling plot of $\log J$ vs. $\ln S/[T_c/T - 1]^{3/2}$ [Hale, B. N., *J. Chem. Phys.* 122, 204509 (2005)], the general form of which has been recently used to test the consistency of nucleation rate data [Gharibeh, M., Kim, Y., Dieregswiler, U., Wyslouzil, B., Ghosh, D. and Strey, R., *J. Chem. Phys.* 122, 094523 (2005); Brus, D., Zdimal, V., and Stratmann, F., *J. Chem. Phys.* 124, 164306 (2006)].

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