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The scaling laws for polymer translocation through a nanopore depend on pore width[1] GARY W. SLATER, HENDRICK W. DE HAAN, University of Ottawa — Results from an extensive Langevin Dynamics simulation study mapping the scaling of the translocation time with polymer length $\tau \sim N^{\alpha}$ over a wide range of nanopore widths will be presented. It is found that the scaling exponent α varies from 2.2 for a tight-pore up to an apparent saturation value of about 3.0 for wide pores. Further characterization given by measuring the average number of monomers in the pore $\langle n_p \rangle$ reveals not only pore-size dependence, but also that $\langle n_p \rangle$ *decreases* with increasing N but increases as translocation proceeds. These results may explain why different simulation methods appear to predict different values for α.

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