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**Stiff Filamentous Virus Translocations through Solid-State Nanopores** ANGUS MCMULLEN, DEREK STEIN, JAY TANG, Brown University — We present experimental results of filamentous virus translocations through a solid-state nanopore. A nanopore can easily detect fd virus due to its linear shape and high linear charge density. With a width of 6.6 nm, a monodisperse length of 880 nm, and a long persistence length of 2.2 $\mu$m, fd is a model stiff polymer for testing theories of translocation dynamics. The distribution of measured ionic current blockade amplitudes indicates that fd virus does not fold during translocation. The mean fd translocation time was linearly proportional to the applied voltage in the range 75 mV to 500 mV. The dispersion in translocation times was much greater for fd virus than expected from Brownian motion or the conformation-dependent fluid drag. Possible explanations for the observed dispersion will be discussed in light of its dependence on voltage and the salt concentration. This work was supported by NSF Grant CBET0846505 and the Brown University IMNI.

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