

Abstract Submitted  
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**Electrophoresis of semiflexible heteropolymers and the “hydrodynamic Kuhn length”** MYKYTA V. CHUBYNSKY, GARY W. SLATER, Department of Physics, University of Ottawa, Canada — Semiflexible polymers, such as DNA, are rodlike for short lengths and coil-like for long lengths. For purely geometric properties, such as the end-to-end distance, the crossover between these two behaviors occurs when the polymer length is on the order of the Kuhn length. On the other hand, for the hydrodynamic friction coefficient it is easy to see by comparing the expressions for a rod and a coil that the crossover should occur at the polymer length, termed by us the *hydrodynamic Kuhn length* [1], which is larger than the ordinary Kuhn length by a logarithmic factor that can be quite significant. We show that for the problem of electrophoresis of a heteropolymer consisting of several blocks of (in general) different stiffnesses, both of these length scales can be important depending on the details of the problem. [1] M. V. Chubynsky and G. W. Slater, *Macromolecules* 48 (2015) 5899.

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