Pore translocation of knotted polymers

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Abstract: Nanopore translocation is increasingly used to probe physico-chemical properties of DNA filaments. In the recent breakthrough study of Pleas et al.[1], this technique was used to detect knots trapped in DNA rings. I will present a recent study were we used a detailed mesoscopic model for DNA to simulate the translocation of knotted DNA filaments and thus expose its unexpectedly rich phenomenology[2]. If time allows I will also report on simulations of self-assembling knotted constructs that have recently allowed for predicting complex target topologies [3], which have been realized experimentally[4].

References:
https://www.youtube.com/watch?v=XKsuMlp2PLc&feature=youtu.be