Contribution ID: **16**   Type: **Poster**

A Stochastic Model of Translocation of Knotted Proteins

Tuesday, 26 September 2023 16:38 (1 minute)

Knotted proteins can become jammed when forced through pores if the knots in their backbone tighten under force. Alternatively, the knot can slide off the chain, enabling translocation. This process can be described using a simple energy landscape model with a time-periodic potential that mimics the action of a molecular motor. Such a stochastic model exhibits similar behaviour to results obtained from molecular dynamics but has the advantage of simplicity and interpretability with only a few parameters. This talk will present the model along with results for translocation time as a function of the period of the pulling force and discuss the asymptotic limits and biological relevance of the findings.

Primary author: Dr CAPAŁA, Karol (Sano Centre for Computational Medicine)

Co-author: SZYMCZAK, Piotr (University of Warsaw)

Presenter: Dr CAPAŁA, Karol (Sano Centre for Computational Medicine)

Session Classification: Poster Session