Theoretical characterization of the efficiency of molecular motors

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This poster presents the new theoretical approach to characterize the efficiency of molecular motors, operating in strongly stochastic environment. This approach is based on the recent progress in the theory of stochastic ratchets and the pump effect, in particular, on the discovery of geometric phases in purely classical stochastic kinetics. Molecular motors provide the natural application of this theory, promising new insight into quantitative interpretation of related single molecule experiments. The application of this new theoretical technique to quantitative stochastic description of F0F1-ATPase will be demonstrated.