

## Muscle's Motion in an Overdamped Regime

AI Bao-Quan,<sup>1</sup> WANG Xian-Ju,<sup>1</sup> LIU Liang-Gang,<sup>1</sup> M. Nakano<sup>2</sup> and H. Matsuura<sup>3</sup>

<sup>1</sup> Department of Physics, Zhongshan University, Guangzhou 510275, China

<sup>2</sup> Department of Information Science, University of Occupational and Environmental Health, Japan

<sup>3</sup> Department of Project Center, National Graduate Institute for Policy Studies, Japan

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**Abstract:** Based on the stochastic inclined rods model proposed by H. Matsuura et al., we study the motion of actin myosin system in an overdamped regime. Our model is composed of an inclined spring (rod), a myosin head and a myosin filament. The results of calculation show that the model can convert the random motion to one-directional motion, and the myosin head works as a resonator of random noise, which absorbs the energy through a stochastic resonance. The results show that the inclined rod and the intermolecular potential are very important for the system to move.

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Key words: stochastic resonance, intermolecular potential, actin myosin system

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