

Abstract Submitted  
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**Time dependent quantum transport in a vibrating quantum dot in Kondo regime**<sup>1</sup> ALI IHSAN GOKER, Department of Physics, Bilecik University — We employ the time dependent non-crossing approximation to investigate the effect of strong electron-phonon coupling on the instantaneous conductance and thermopower of a single electron transistor which is abruptly shifted into the Kondo regime via a gate voltage. We find that the instantaneous conductance exhibits decaying sinusoidal oscillations on the long timescale for infinitesimal bias [1]. The ambient temperature and electron-phonon coupling strength influence the amplitude of these oscillations and the frequency of oscillations is equal to the phonon frequency. We discuss the origin of these oscillations and the effect of finite bias on them. On the other hand, we argue that measurement of the decay time of thermopower to its steady state value in linear response might be an alternative tool in determination of the Kondo temperature and the actual value of the electron-phonon coupling strength in an experiment.

[1] A. Goker, J. Phys.: Condens. Matter, 23 (2011) 125302

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