

Abstract Submitted  
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**Is the high frequency thermopower useful for predicting properties of strongly correlated materials?**<sup>1</sup> JESUS CRUZ, JAMES FREERICKS, Georgetown University — Shastry has proposed that the high-frequency thermopower can be used for meaningful predictions of the dc thermopower in many strongly correlated materials. If true, this will make it much easier to screen strongly correlated materials for useful thermoelectric properties because it is much easier to calculate the high-frequency limit. By solving this problem exactly for the Falicov-Kimball model using dynamical mean-field theory, we find that this approach often does not work. We also compare with usual approximations for the thermopower, we find that the Heikes formula gives a good description of the high frequency thermopower while the Kelvin formula is equivalent at high temperature. Unfortunately, the only accurate way to find the dc thermopower is with the conventional Kubo formula.

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