Review of: "Correlating exciton coherence length, localization, and its optical lineshape"

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Potential competing interests: No potential competing interests to declare.

In this work, the authors develop a ‘1D lattice exciton model’ to capture the coupling between the lattice and the exciton within a non-perturbative and self-consistent framework, including temperature effects.

The model correctly captures the T-dependence of the energy variance, including lattice reorganization effects.

The manuscript is well written and the theoretical models are well explained.

However, some parameters are not defined, especially in eqs. 13-16 (chi, phi, Hlat, Hint, omega, g) and in eqs. 22-24 (mu, beta, J). For instance, it is not clear whether E_reorg and mu refer to the same quantity (the reorganization energy)?

The authors briefly mention the potential use of their model to study conjugated polymer and molecular aggregates. I believe this work could attract a broader audience by adding some practical examples and applications of the model.