

量子生物化学公開セミナー

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Title :

The hierarchy of Davydov trial states: from guesswork to numerically "exact" many-body wave functions

Speaker : Prof. Yang Zhao

(Nanyang Technological University, Singapore)

場所 : 九州大学大学院 理学研究院 講義棟3階301

日時 : 2023年5月22日(月) 16:00~17:30

要旨 :

Numerically exact in the limit of large multiplicity, the multiple Davydov trial states grew out of the semi-classical Davydov solitons in the 1980s. In particular, the multi-D2 ansatz is especially versatile, capable to handle various forms of particle-boson interactions. A highly competitive alternative to numerically “exact” methods such as NRG, HEOM, and QUAPI, the time-dependent variation with the multi-D2 ansatz has found applications in a variety of problems ranging from one- and two-impurity spin-boson models, dissipative multi-level Landau-Zener transitions, driven Rabi dimers, to singlet fission dynamics, multidimensional spectroscopy of molecular aggregates, dissipative dynamics at conical intersections, and most recently, hole dynamics in the t-J model and time-resolved fluorescence in TMD monolayers.

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