

Abstract Submitted  
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**Hamiltonian approach to Feynman's path-integral polaron treatment**<sup>1</sup> J.T. DEVREESE, S.N. KLIMIN, Theorie van Quantum en Complexe Systemen (TQC), Universiteit Antwerpen, Antwerpen, Belgium — The Feynman path-integral based all-coupling variational approach for the Fröhlich-polaron is reformulated and extended using the Hamiltonian formalism with time-ordered operator calculus. Special attention is devoted to the excited polaron states. The energy levels and the inverse lifetimes of the excited polaron states are, for the first time, explicitly calculated within this all-coupling approach. The resulting transition energies are compared with the peak positions of the polaron optical conductivity, as recently calculated numerically using diagrammatic quantum Monte Carlo.

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