Abstract

Condensed Matter

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The Landau-Pekar equations: Adiabatic theorem and accuracy

Joint with Simone Rademacher, Benjamin Schlein and Robert Seiringer

We prove an adiabatic theorem for the Landau-Pekar equations. This allows us to derive new results on the accuracy of their use as effective equations for the time evolution generated by the Fröhlich Hamiltonian with large coupling constant α. In particular, we show that the time evolution of Pekar product states with coherent phonon field and the electron being trapped by the phonons is well approximated by the Landau-Pekar equations until times short compared to α^2.