Influence of randomly fluctuating forces and energy dissipation on soliton dynamics in transpolyacetylene. Godzik, A.; Seel, M.; Foerner, W.; Ladik, J

Abstract

The influence of the environment of trans-polyacetylene on the soliton dynamics is studied by using the Su-Schrieffer-Heeger Hamiltonian and a Langevin approach in which random fluctuating forces and a damping term are added to Newton's equations of motion. According to the numerical results, the neutral kink solns. remain stable until the interactions with the environment are of the same order of magnitude as the interactions along the chain.