On the localized wave solutions to the models for complex media with oscillating inclusions

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Abstract:

The talk deals with the wave solutions to a one dimensional mathematical model for media with oscillating inclusions. This model consists of the wave equation for a nonlinear carrying medium and oscillators connected with the carrying medium. In case of the cubic equation of state for the carrying medium, the soliton-like solutions and its stability are studied in more details. In case of the nonlocal dynamical equation of state for the carrying medium, chaotic and quasiperiodic solutions, and its bifurcations are investigated by means of the qualitative analysis methods.