

# Global attractor for Klein-Gordon equation interacting with a nonlinear oscillator.

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We consider the  $U(1)$ -invariant Klein-Gordon equation in continuous and in discrete space-time, with the nonlinearity concentrated at one point. We show that solitary waves form the weak global attractor for this equation. That is, for large positive or negative times any finite energy solution converges to the set of all solitary waves. The convergence takes place in localized (weighted) norms.

This is a joint work with Alexander Komech, Vienna University and IITP, Moscow