Blow-up and energy decay for a class of wave equations with nonlocal Kirchhoff-type diffusion and weak damping

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Abstract

The purpose of this paper is to study the following equation driven by a nonlocal integro-differential operator $\mathcal{L}_K$:
$$u_{tt}+[u]_s^{2(\theta-1)}\mathcal{L}_Ku+a|u_t|^{m-1}u_t=b|u|^{p-1}u$$
with homogeneous Dirichlet boundary condition and initial data, where $[u]^2_s$ is the Gagliardo seminorm, $a\geq 0,~b>0,~0$

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