

Breakdown For A Kirchhoff-Type Beam With A Fractional Boundary Feedback

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Summary

A Kirchhoff-type equation describing the transversal vibrations of a beam is considered. The beam is clamped to a rigid base at one part of its edge and free at the remaining part. On the free part, it is subject to a feedback involving fractional derivatives instead of the classical velocity of the deflection and angular velocity. In presence of an external nonlinear source we prove that solutions blow up at a finite time.

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