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An Approximation Method for Exact Boundary Controllability of Euler-Bernoulli

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Abstract : The aim of this work is to study the numerical implementation of the Hilbert uniqueness method for the exact boundary controllability of Euler-Bernoulli beam equation. This study may be difficult. This will depend on the problem under consideration (geometry, control, and dimension) and the numerical method used. Knowledge of the asymptotic behaviour of the control governing the system at time T may be useful for its calculation. This idea will be developed in this study. We have characterized as a first step the solution by a minimization principle and proposed secondly a method for its resolution to approximate the control steering the considered system to rest at time T.

Keywords : boundary control, exact controllability, finite difference methods, functional optimization
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