

论文

THE APPROXIMATION PROBLEM FOR HYPERBOLIC POINTWISE CONTROL SYSTEMS

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摘要 The distributed control approximation of pointwise control for the hyperbolic system is considered. First, it is shown that there is a unique solution in $C([0, T]; L^2(\Omega))$ for the hyperbolic system with pointwise input. Then an approximate technique of the hyperbolic pointwise input system is proposed, and it is proved that the solution of the obtained approximate equation converges in L^2 -norm to that of the original pointwise input system. Finally, it is shown that under the quadratic index, the corresponding approximate optimal control is also convergent in L^2 -norm.

关键词 [Hyperbolic system, pointwise control app](#)

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Abstract The distributed control approximation of pointwise control for the hyperbolic system is considered. First, it is shown that there is a unique solution in $C([0, T]; L^2(\Omega))$ for the hyperbolic system with pointwise input. Then an approximate technique of the hyperbolic pointwise input system is proposed, and it is proved that the solution of the obtained approximate equation converges in L^2 -norm to that of the original pointwise input system. Finally, it is shown that under the quadratic index, the corresponding approximate optimal control is also convergent in L^2 -norm.

Key words [Hyperbolic system](#) [pointwise control approximation](#) [optimal control](#)

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