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Abstracts of Short Communications and Posters

Section:

17. Control Theory and Optimization

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On the Optimal Control of Nonlinear Hyperbolic System – Approximation

We discuss optimal control problems governed by equations $y'' + Ay' + Ly = g + Bu$, $y(0) = y_0$, $y'(0) = y_0'$, $Gy = \gamma$ where A is a nonlinear operator, L and B are linear operators and G is a bounary operator (Dirichlet or Neumann) in Sobolew spaces with a quadratic cost. We prove that non-homogeneous boundary problem can be reduced to the homogeneous nonlinear boundary problem and non-homogeneous linear boundary problem. We present the Galerkin approximation and we demonstrate the convergence of optimal values for approximated control problems to the one for orginal problem. This extends some results from our paper in *Math. Math. Appl. Sci.* Vol. **20**, (1997), 1365-1377.