Exact boundary controllability for quasilinear hyperbolic systems

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Abstract:
By means of the existence and uniqueness of the semi-global C^1 solution to the mixed initial-boundary value problem for first order quasilinear hyperbolic systems with general nonlinear boundary conditions, we establish the exact boundary controllability for general quasilinear hyperbolic systems if the C^1 norm of initial and final states is small enough and give corresponding applications to nonlinear vibrating string equations.