

A Stochastic Optimal Control Problem for the Heat Equation on the Halfline with Dirichlet Boundary-noise and Boundary-control

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We consider a controlled state equation of parabolic type on the halfline $(0, +\infty)$ with boundary conditions of Dirichlet type in which the unknown is equal to the sum of the control and of a white noise in time. We reformulate the state equation as an evolution equation in $L^2((0, +\infty); \xi^{1+\theta} d\xi)$, and we study optimal control problems related by means of backward stochastic differential equations.