A Numerical Method for a Class of Backward Stochastic Differential Equations and Applications to Stochastic Resonance

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We propose a method for numerical approximation of the solutions of backward stochastic differential equations in some non-lipschitz conditions for the coefficient functions. Our method is simple to implement and it relies on approximation of Brownian motion by simple random walk. Using the benefit of stochastic resonance we apply the obtained results to control an electronic circuit.