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SECOND ORDER NONLINEAR RANDOM DIFFERENTIAL EQUATIONS

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Abstract. In this paper, an existence result for a nonlinear second order ordinary random differential equation is proved under a Carathéodory condition. Two existence results for extremal random solutions are also proved for Carathéodory as well as discontinuous cases of the nonlinearity involved in the equations. Our investigations are placed in the Banach space of continuous real-valued functions on closed and bounded intervals of the real line together with an application of the random version of the Leray-Schauder principle.

Mathematics subject classification (2010): 35F05, 47H10, 47H40, 47N20, 60H25.
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