Monotonicity and Comparison Results for Non-negative Dynamic Systems. Part II: Continuous-Time Case

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Abstract: This second Part II, which follows a first Part I for the discrete-time case (see [**?**]), deals with monotonicity and comparison results, as generalization of the pure stochastic case, for stochastic dynamic systems with arbitrary nonnegative generators in the continuous-time case.

In contrast with the discrete-time case the generalization is no longer straightforward. A discrete-time transformation will therefore be developed first. Next, results from Part I can be adopted.

The conditions, the technicalities and the results will be studied in detail for a reliability application that initiated the research. This concerns a reliability network with dependent components that can breakdown. A secure analytic performance bound is obtained.