

Laboratory MSTD, Faculty of Mathematics, USTHB.

DEPARTMENT OF PROBABILITY AND STATISTICS

Weekly Seminar of the MSTD Laboratory 2025

Presentation on Wednesday, November 12, 2025

Bloc CAM — 10:30 a.m.

# Reliability and Performance Analysis of a Retrial $K$ -out-of- $n:G$ System with Warm and Cold Standbys Using Stochastic Petri Nets

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## ABSTRACT

This presentation analyzes a retrial  $K$ -out-of- $n:G$  repairable system with warm and cold standbys using Stochastic Petri Nets. The model captures component failures, repairs, and standby mode transitions. Key performance measures such as availability and reliability are derived to evaluate system dependability and compare the effects of different standby strategies.