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Quantitative
Modeling
In
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The Compensation Approach Applied to a 2×2 Switch

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D W2.T1.5-2.v1

September 1993

Distribution Level: Public

Approved by: O. Boxma

Abstract In this paper we analyze an asymmetric 2×2 buffered switch, fed by two independent Bernoulli input streams. We derive the joint equilibrium distribution of the numbers of messages waiting in the two output buffers. This joint distribution is presented explicitly, without the use of generating functions, in the form of a sum of two alternating series of product-form geometric distributions. The method used is the so-called compensation approach, developped by Adan, Wessels and Zijm.

The QMIPS Project: The QMIPS project is a collaborative research project supported by the CEC as ESPRIT-BRA project no 7269. It is being carried out by the following organisations: CWI (Amsterdam), EHEI (University of Paris V), Imperial College (London), INRIA (Sophia-Antipolis), University of Erlangen, University of Newcastle, University of Torino and University of Zaragoza.