

## HARRIS ERGODICITY OF A SPLIT TRANSMISSION CONTROL PROTOCOL

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Additive-increase multiplicative-decrease transmission control protocols are well known and have been studied in numerous papers. It is much more difficult to study the properties of systems of interacting protocols. We consider a queueing system in which both the intensity of the input stream and the intensity of the service follow a TCP protocol and the dynamics of the latter depends on both intensities. This kind of stochastic system was proposed by Baccelli, Carofiglio, and Foss in 2009, who have proved the positive recurrence of the underlying Markov chain and studied a number of statistical properties of the model. In this paper, we introduce a more general stochastic model and prove a stronger statement: the Harris ergodicity of the corresponding Markov chain. This is joint work with Sergey Foss.