A model of heterogeneous TCP algorithms

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Abstract

TCP/AQM protocols can be interpreted as distributed primal-dual algorithms over the Internet to maximize aggregate utility. This interpretation, however, is valid only when all TCP sources react to the same type of price signal (congestion measure) at the links in their paths. We extend the current model to the case where heterogeneous TCP sources that react to different price signals share the same network. This model is useful in understanding the interaction of loss-based TCP algorithms such as Reno and delay-based TCP algorithm such as FAST.