AQM algorithm under PLT principle

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1 PROBLEM DEFINITION

General formulation is

$$\dot{x} = f(x(t),\ q(t)),$$

$$\dot{p} = f(y(t),\ p(t)),$$

where

$$q = R^T p, \quad y = Rx.$$

In case of DCTCP on router one can derive[1].

$$\dot{x}_f(t) = \frac{1}{d_f^2}\left[1 - \frac{1}{2}d_f x_f \sigma\left(\frac{t}{d_f}\right)\right], \tag{1.1}$$

where d_f is RTT, function $\sigma(\cdot)$ is

$$\sigma(x) = \begin{cases} x & 0 \le x \le 1, \\ 1 & x \ge 1. \end{cases}$$

REFERENCES

[1] C. D. Lai, S. H. Low, K. C. Leung, and V. O. K. Li. Pricing link by time. *Proc. ACM Sigmetrics Conference,* 2014.