An stability analysis on a Time-varying chemostat with pointwise delay

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We revisit a recently introduced chemostat model of one–species with a T-periodic input of a single nutrient which is described by a system of delay differential equations. Previous results provided sufficient conditions ensuring the existence and uniqueness of T-periodic solution for delays arbitrarily small. We partially extend these results by proving –with the construction of Lyapunov like functions– that the above periodic solution is globally asymptotically stable when considering Monod uptake functions and a particular family of nutrient inputs.