# Workload and busy period for $M/GI/1$ with a general impatience mechanism

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The paper deals with the workload and busy period for the $M/GI/1$ system with impatience under FCFS discipline. The customers may become impatient during their waiting for service with generally distributed maximal waiting times and also during their service with generally distributed maximal service times depending on the time waited for service. This general impatience mechanism was originally introduced by Kovalenko (1961) and considered by Daley (1965), too. It covers the special cases of impatience on waiting times as well as impatience on sojourn times, for which Boxma et al. (2010), (2011) gave new results and outlined special cases recently. Our unified approach bases on the vector process of workload and busy time. Explicit representations for the LSTs of workload and busy period are given in case of phase-type distributed impatience.

This talk is based on joint work with M. Brandt.