# Gaussian queues: the analysis of the asymptotic constant

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Consider a fluid queue with service rate $c > 0$ and input process modelled by a centered Gaussian process with stationary increments $\{\eta(t) : t \in \mathrm{R}\}$. Under some general assumptions on $\eta(\cdot)$, the steady state buffer content $W$ for the system can be expressed as $W =_{\mathrm{d}} \{\sup_{s\geq 0} \eta(s) - cs\}$ and

$$\mathbf{P}(W > u) = Cu^{\alpha} \exp(-Au^{\beta})(1 + o(1)),$$

as $u \to \infty$.

The asymptotic constant $C$ can be expressed by the so called *Pickands constants*. Unfortunately, in most cases no formula or approximation for $C$ are known.

In this talk we focus on the analysis of $C$ for the class of input processes related with fractional Brownian motions.

The talk is based on the joint work with Pawel Kisowski.