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ASYMPTOTICS OF THE SUPREMUM OF SCALED BROWNIAN MOTION

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Abstract: We consider the problem of estimating the tail of the distribution of the supremum of scaled Brownian motion $B(f(t))$ processes with linear drift.

Using the *local time* technique we obtain asymptotics and bounds of

$$P(\sup_{t\geq t_0}(B(f(t))-t)>u),$$

which are expressed in terms of the expected value of the *local time* of $B(f(t))-t$ processes at level u.

As an application we obtain upper bounds for the tail of distribution of the supremum for some Gaussian processes with stationary increments.

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