Jarmo Malinen: *A remark on the Hille–Yoshida generator theorem*; Helsinki University of Technology Institute of Mathematics Research Reports A469 (2004).

Abstract: *It is well-known (and can be proved in a number of ways) that a densely defined, closed operator A generates a bounded C_0-semigroup if (and only if) the Hille–Yoshida resolvent condition*

$$\|(s_j - A)^{-k}\| \leq \frac{M}{s_j^k} \tag{1}$$

holds for some positive and unbounded sequence $\{s_j\}_{j\geq 1}$. We give a novel and short "frequency domain" proof for the observation that the resolvent condition (1), indeed, is only *required for such sequences $\{s_j\}_{j\geq 1}$. The proof is based on studying the analytic function $s \mapsto (I - A/s)^{-1}$ whose values are power bounded operators.*

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