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On sequences preserving q –Gevrey asymptotic expansions

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Preservation of q -asymptotic expansions (resp. q -Gevrey properties) is analyzed on sequences of positive real numbers. Such asymptotic expansions naturally appear when relating the analytic and the formal solutions of q -difference equations.

A characterization of such sequences is determined, providing a handy tool in practice. The sequence of q -factorials is proved to preserve q -Gevrey asymptotic expansions. Recent results distinguish such sequences from those preserving asymptotic expansions.

Joint work with S. Michalik.
