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George A Anastassiou* (ganastss@memphis.edu), Department of Mathematical Sciences,
University of Memphis, Memphis, TN 38152. *Stochastic Korovkin Theory given
quantitatively*. Preliminary report.

We introduce and study very general stochastic positive linear operators. These are acting on the space of real differentiable stochastic processes. Under mild and natural assumptions we study the q -mean convergence to the stochastic unit of these operators with rates. We establish first L_q Shisha-Mond type inequalities involving q -mean moduli of continuity, $q > 1$. Then we derive related stochastic Korovkin type theorems. The impressive fact is that the same basic real Korovkin assumptions force convergence in the stochastic case. Our theory applies to all basic stochastic operators induced by real summation and integration. We give applications. (Received January 18, 2006)