

# Quantitative version of Korovkin type theorems and its application to preconditioners

Vinaya P. C.

*Department of Mathematics, Cochin University of Science and Technology,  
India*

## Abstract

The classical Korovkin theorem, due to P.P. Korovkin has many generalizations and analogues to different settings and applications to various branches of science (See [3]). A quantitative form of the Korovkin's theorem obtained by O. Shisha and B. Mond in 1968 [5] gives the rate of convergence of the approximation process utilizing the modulus of continuity. Recently, Yusuf Zeren, Migdad Ismailov and Cemil Karacam obtained a Korovkin-type theorem in the setting of Banach function spaces in [6]. An operator version of Korovkin's theorem is obtained by Dumitru Popa [4]. We proved quantitative versions of these results and applied our theorem to various examples in [2]. An important application of this result to the preconditioners of Toeplitz linear systems is also given there. In this talk, I plan to discuss these recent developments and other related problems concerning the convergence of preconditioned linear systems.

## Keywords

Korovkin theorem, Modulus of Continuity, Preconditioners

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## References

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