

A New Method for Approximations in Probability and Operator Theories

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The aim of the lecture is to introduce a new approach in normal approximations, approximations of semigroups of operators, and approximations by accompanying laws. We describe the method and provide examples showing how the method works. Loosely speaking, the approach is based on multiplicative representations of differences to estimate. The method reduces considerably the technical part of proofs compared to the traditional approaches. In probability it applies nicely to the non-identically distributed case; another advantage of the method is its extendibility to the case of dependent random variables. Current research results using the method will be discussed.