Title: On the rates of convergence in von Neumann's and Birkhoff's ergodic theorems

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Abstract. The estimates of the rates of convergence in ergodic theorems have to be the spectral ones. The constants between (equivalent to each other) power-function rate of convergence in von Neumann ergodic theorem, and power-function singularity at zero of the spectral measure of averaging function with respect to the dynamical system, are obtained. This rate of convergence is estimated also via the speed of decreasing of correlation coefficients. Also, the constants of analogous estimates of the power-function rate of convergence in Birkhoff ergodic theorem, are obtained. Possible applications are discussed. (Joint work with Nikolay Dzhulay, Ivan Podvigin, and Vladimir Sedalishchev).