Fourier coefficients of Lifshitz-class functions

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In the present paper we consider some specific properties of special series of Fourier coefficients of the Lipschitz class functions with respect to general orthonormal systems (ONS). The obtained results demonstrate that the properties of the general ONS and of the subsequence of this system are essentially different. It is shown that the problems for the general ONS are trivial for classical ONS (trigonometric, Haar and Walsh systems). The properties of the Fourier series of the functions from some di erentiable class are well known for classical orthonormal sys tems (trigonometric, Haar, Walsh, etc.). On the other hand, S. Banach proved that good di erential properties of a function do not guarantee the a.e. convergence of the Fourier series of this function with respect to general orthonormal systems (ONS). Therefore, in order to obtain well-known results for general ONS, we need to impose speci c condi tions on the given system. In the present paper we nd conditions on the functions of an ONS under which the Fourier series of di erentiable functions are convergent a.e.