



ЮЖНЫЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ
Региональный математический центр
SOUTHERN FEDERAL UNIVERSITY
Regional Mathematical Center
<https://rmc.sfedu.ru/>, Rostov-on-Don, Russia

International scientific online seminar on Analysis, Differential Equations and Mathematical Physics

Coordinators: Prof. Alexey Karapetyants, Prof. Vladislav Kravchenko

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22 July 2021, 6 pm (GMT+3)

Higher dimensional summability and Lebesgue points

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Several types of a general summability method of two-dimensional Fourier transforms are investigated with the help of an integrable function θ . Some special cases of the θ -summation are considered, such as the rectangular, triangular, circular and cubic summability and the Weierstrass, Abel, Picard, Bessel, Fejér, de La Vallée-Poussin, Rogosinski and Riesz summations. We introduce the concept of different Lebesgue points and show that almost every point is a Lebesgue point of f from the Wiener amalgam space $W(L_1, \ell_\infty)(\mathbb{R}^2)$. We give several generalizations of the well known Lebesgue's theorem for the summability of two-dimensional Fourier transforms. More exactly, under some conditions on θ , we show that the different types of summability means of a function $f \in W(L_1, \ell_\infty)(\mathbb{R}^2) \supset L_1(\mathbb{R}^2)$ converge to f at each Lebesgue point.

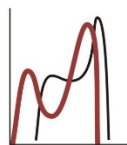
*Seminar website: <https://rmc.sfedu.ru/seminar>. The seminar uses Microsoft Teams online platform. Please send questions to pichugina@sfedu.ru (Olga Pichugina, scientific secretary).

The seminar is organized by the Regional Mathematical Center of the Southern Federal University in collaboration with Institute of Mathematics, Mechanics and Computer Sciences of the Southern Federal University and the special Interest ISAAC-OTHA group in Operator Theory and Harmonic Analysis.

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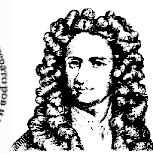
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