



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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24 June 2021, 6 pm (GMT+3)

Elliptic Equations with Degenerate Weights

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We obtain new local Calderon-Zygmund estimates for elliptic equations with matrix-valued weights for linear as well as non-linear equations. We introduce a novel log-BMO condition on the weight. In particular, we assume smallness of the logarithm of the matrix-valued weight in BMO. This allows to include degenerate, discontinuous weights. The assumption on the smallness parameter is sharp and linear in terms of the integrability exponent of the gradient. This is a novelty even in the linear setting with non-degenerate weights compared to previously known results, where the dependency was exponential.

The talk is based on joint work with Anna Balci, Raffaella Giova and Antonia Passarelli di Napoli.

*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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