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Riesz rising sun lemma for several variables and the John-Nirenberg inequality. (English. Russian original) [Zbl 1094.42021](#)

Math. Notes 77, No. 1, 48-60 (2005); translation from *Mat. Zametki* 77, No. 1, 53-66 (2005).

Summary: We obtain a multidimensional analog of the well-known Riesz rising sun lemma. We prove a more precise version of this lemma for space dimension $d = 2$. We use these lemmas to establish an anisotropic analog of the John-Nirenberg inequality for functions of bounded mean oscillation with an exact constant in the exponent. Earlier, this exact constant was only known in the one-dimensional case.

MSC:

[42B25](#) Maximal functions, Littlewood-Paley theory

[42C20](#) Other transformations of harmonic type

Cited in **2** Documents

Keywords:

rising sun lemma; function of bounded mean oscillation; equimeasurable rearrangement; stopping-time technique; BMO

Full Text: [DOI](#)

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