

# Strong approximation by Fourier series and generalized periodic Nikol'skij-Besov-Morrey spaces

Zhuldyz Baituyakova<sup>1</sup>, Dauren Matin<sup>1</sup>, Meruert Ilyasova<sup>1</sup>

<sup>1</sup>*L.N.Gumilyov Eurasian National University, Kazakhstan*

*baituyakova.zhzh@yandex.ru, d.matin@mail.ru*

**Abstract:** In recent years, a lot of attention has been paid to study of Morrey type spaces. Many applications in partial differential equation of Morrey spaces and Nikol'skij-Besov spaces have been given in work G. Di Fazio and M. Ragusa and the book of T. Mizuhara. The theory of generalized Nikol'skij-Besov-Morrey spaces is developed. Generalized Morrey spaces, with T. Mizuhara and E. Nakai proposed, are equipped with a parameter and a function. In the present paper we study Nikol'skij-Besov spaces on scale generalized periodic Morrey space. Finally, we get an interesting characterization of the space  $\mathcal{N}_{\varphi,p,q}^s(\mathbb{T})$  by using differences of partial sums of the Fourier series and consequence for strong approximation of Fourier series on Morrey space.

**2010 Mathematics Subject Classification:** 35J05, 35J08, 35J25

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