

Kochubei, Anatoly N.; Soskin, Daniel S.

Asymptotic properties of the p -adic fractional integration operator. (English) [Zbl 1389.11140](#)
Methods Funct. Anal. Topol. 23, No. 2, 155-163 (2017).

A. N. Kochubei [*Pac. J. Math.* 269, No. 2, 355–369 (2014; [Zbl 1396.35070](#))] introduced a right inverse I^α of Vladimirov's fractional differentiation operator D^α ($\alpha > 0$) acting on complex-valued functions on the field of p -adic numbers. I^α can be seen as a p -adic counterpart of the Riemann-Liouville fractional integral of real analysis. In this paper, the authors study asymptotic properties of $I^\alpha f$, given the asymptotics of a function f . See *S. G. Samko* et al. [*Fractional integrals and derivatives: theory and applications*. New York, NY: Gordon and Breach. xxxvi, 976 p. (1993; [Zbl 0818.26003](#))] for results of this kind for the Riemann-Liouville integration operator.

Reviewer: [Anatoly N. Kochubei \(Kyiv\)](#)

MSC:

[11S80](#) Other analytic theory (analogues of beta and gamma functions, p -adic integration, etc.)
[26A33](#) Fractional derivatives and integrals

Keywords:

[fractional differentiation operator](#); [fractional integration operator](#); [\$p\$ -adic numbers](#)

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