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*On the  $\mathcal{L}$ -characteristic of fractional powers of linear operators*

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**Abstract:** We describe the geometric structure of the  $\mathcal{L}$ -characteristic of fractional powers of bounded or compact linear operators over domains with arbitrary measure. The description builds essentially on the Riesz-Thorin and Marcinkiewicz-Stein-Weiss- Ovchinnikov interpolation theorems, as well as on the Krasnosel'skij-Krejn factorization theorem.

**Keywords:** fractional powers of operators,  $L$ -characteristic, Lebesgue spaces, interpolation theorems

**AMS Subject Classification:** 47A57, 47B37, 47B38, 46E30