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Title: On Lebesgue decomposition of p -adic distributions

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Given a prime number p , let \mathbb{C}_p be the Tate field, which is the topological completion of the algebraic closure of the field of p -adic numbers with respect to the usual p -adic absolute value. Let X be a compact subset of \mathbb{C}_p , which is without isolated points. The goal of our paper is to give a p -adic analogue of the classical theorem of Lebesgue–Radon–Nikodym, that is, under some hypothesis, a p -adic distribution on X with values in \mathbb{C}_p , in the sense of Mazur, decomposes into a sum of two distributions, one of them given by the Radon–Nikodym derivative and the other a p -adic measure.

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