

QUADRATIC APPROXIMATION IN THE FIELD OF p -ADIC NUMBERS

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Let p be a prime number. Let w_2 and w_2^* denote the exponents of approximation defined by Mahler and Koksma, respectively, in their classifications of p -adic numbers. It is known that every p -adic number ξ satisfies $w_2^*(\xi) \leq w_2(\xi) \leq w_2^*(\xi) + 1$, with $w_2^*(\xi) = w_2(\xi) = 2$ for almost all ξ . By means of Schneider's continued fractions, we give explicit examples of p -adic numbers ξ for which the function $w_2 - w_2^*$ takes any prescribed value in the interval $(0, 1]$.

This is joint work with Yann Bugeaud