

On p -adic Analytic Interpolation of Integer Numbers

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1 Abstract

In 1958, Mahler characterized when a sequence $(u_n)_{n \geq 0}$ of integer number can be p -adically interpolated. In this paper, we shall use the Mahler base for space of p -adic continuous functions to study when a sequence $(u_n)_{n \geq 0}$ of integer numbers, such that $u_n = O(n)$ can be p -adically interpolated by a p -adic analytic function $f : \mathbf{Z}_p \rightarrow \mathbf{Q}_p$. In particular, we shall give a simple characterization for this sequences, when f can be extended analytically for \mathbf{Q}_p .