

p -adic logarithmic functions and applications

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Abstract

We review the definition of p -adic elliptic logarithmic functions introduced in the book *Elliptic Curves: Diophantine Analysis* of Serge Lang and we give precise analytic and arithmetic estimates which we apply to obtain lower bounds in linear forms in p -adic elliptic logarithms. We also discuss the role of p -adic logarithmic functions in the proof of transcendence, where logarithmic functions have better properties from analytic and arithmetic viewpoints, than those of exponential functions in the p -adic number field.