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Rational summation of p -adic series. (English) Zbl 0860.11070

Theor. Math. Phys. 100, No. 3, 1055-1064 (1994) and Teor. Mat. Fiz. 100, No. 3, 342-353 (1994).

Certain p -adic power series, their domain of convergence, and the problem as to whether the sum is rational for some rational value of the variable, are discussed. Examples of such series are given. In the introduction the connection with p -adic quantum field theory is explained.

Note of the reviewer: In section 5 of the paper it is stated that $\sum n!$ cannot be rational in every \mathbb{Q}_p (p prime). However, according to the quoted reference, it is only known that the sum cannot be rational in every \mathbb{Q}_n ($n \in \mathbb{N}$, $n \geq 2$).

Reviewer: [W.Schikhof \(Nijmegen\)](#)

MSC:

- 11S80** Other analytic theory (analogues of beta and gamma functions, p -adic integration, etc.)
- 30B10** Power series (including lacunary series) in one complex variable
- 81T30** String and superstring theories; other extended objects (e.g., branes) in quantum field theory

Cited in **1** Review
Cited in **4** Documents

Keywords:

p -adic power series; p -adic quantum field theory; convergence; rational value

Full Text: [DOI](#)

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