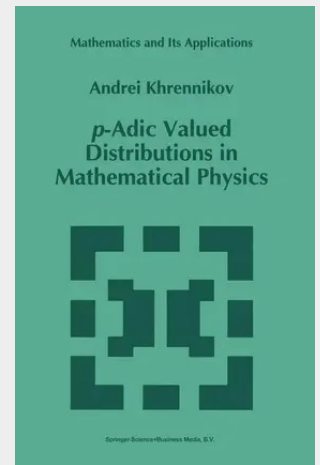


p-Adic Valued Distributions in Mathematical Physics

Numbers., natural, rational, real, complex, p-adic. What do you know about p-adic numbers? Probably, you have never used any p-adic (nonrational) number before now. I was in the same situation few years ago. p-adic numbers were considered as an exotic part of pure mathematics without any application. I have also used only real and complex numbers in my investigations in functional analysis and its applications to the quantum field theory and I was sure that these number fields can be a basis of every physical model generated by nature. But recently new models of the quantum physics were proposed on the basis of p-adic numbers field $\mathbb{Q}_p$. What are p-adic numbers, p-adic analysis, p-adic physics, p-adic probability? p-adic numbers were introduced by K. Hensel (1904) in connection with problems of the pure theory of numbers. The construction of $\mathbb{Q}_p$ is very similar to the construction of $(p \text{ is a fixed prime number, } p = 2, 3, 5, \dots, 127, \dots)$. Both these number fields are completions of the field of rational numbers $\mathbb{Q}$. But another valuation $|\cdot|_p$ is introduced on $\mathbb{Q}$ instead of the usual real valuation $|\cdot|$. We get an infinite sequence of non isomorphic completions of $\mathbb{Q}$: $\mathbb{Q}_2, \mathbb{Q}_3, \dots, \mathbb{Q}_{127}, \dots, \mathbb{R} = \mathbb{Q}_{\infty}$. These fields are the only possibilities to complete $\mathbb{Q}$ according to the famous theorem of Ostrowsky.

Numbers ... , natural, rational, real, complex, p-adic What do you know about p-adic numbers? Probably, you have never used any p-adic (nonrational) number before now. I was in the same situation few years ago. p-adic numbers were considered as an exotic part of pure mathematics without any application. I have also used only real and complex numbers in my investigations in functional analysis and its applications to the quantum field theory and I was sure that these number fields can be a basis of every physical model generated by nature. But recently new models of the quantum physics were proposed on the basis of p-adic numbers field $\mathbb{Q}_p$. What are p-adic numbers, p-adic analysis, p-adic physics, p-adic probability? p-adic numbers were introduced by K. Hensel (1904) in connection with problems of the pure theory of numbers. The construction of $\mathbb{Q}_p$ is very similar to the construction of $(p \text{ is a fixed prime number, } p = 2, 3, 5, \dots, 127, \dots)$. Both these number fields are completions of the field of rational numbers $\mathbb{Q}$. But another valuation $|\cdot|_p$ is introduced on $\mathbb{Q}$ instead of the usual real valuation $|\cdot|$. We get an infinite sequence of non isomorphic completions of $\mathbb{Q}$: $\mathbb{Q}_2, \mathbb{Q}_3, \dots, \mathbb{Q}_{127}, \dots, \mathbb{R} = \mathbb{Q}_{\infty}$. These fields are the only possibilities to complete $\mathbb{Q}$ according to the famous theorem of Ostrowsky.



106,99 €
99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780792331728
Medium: Buch
ISBN: 978-0-7923-3172-8
Verlag: Springer
Erscheinungstermin: 31.10.1994
Sprache(n): Englisch
Auflage: 1. Auflage 1994
Serie: Mathematics and Its Applications
Produktform: Gebunden
Gewicht: 1270 g
Seiten: 264
Format (B x H): 160 x 241 mm

