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SOME PROPERTIES OF THE FIELD OF OPERATORS

Jozef Eliaš

Summary

In the paper [1] the field $T(K)$ of operators is defined as the quotient-field over the ring K of all complex-valued functions defined on the set of all non-negative integers. The addition and multiplication in K is defined by formulae $a + b = \{a(n) + b(n)\}$ and $ab = \left\{ \sum_{i=1}^n a(n-i)b(i-1) \right\}$ respectively (for every $a, b \in K$).

The following theorems are proved.

Every element $p \in T(K)$ can be written in the form $p = \sum_{i=v}^{\infty} a_i i^i$, where $i = 1, 2, \dots$, $v = 0$ is an integer, and a_i ; $i = v, v+1, \dots$, are complex numbers, $a_v \neq 0$.

The operator p belongs to K if and only if $v = 0$.

The function $f = \sum_{i=1}^{\infty} a_i i^i$ can be written in the form $f = gh$, $g, h \in K$, if and only if $a_1 = 0$.

The field $T(K)$ is not algebraically closed [in fact it is proved that the equation $x^2 - f$ is not solvable in $T(K)$].

Исправление к статье

МАТРИЧНЫЙ ПРИЕМ РАСЧЕТА КОЛЕБАНИЙ СТЕРЖНЕВЫХ СИСТЕМ

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На стр. 192 тома 11 (1961), № 3, строка 9 снизу напечатано уравнение $y^{(IV)} - \lambda^4 y = 0$.
Вместо него должно быть

$$y^{(IV)} - \frac{\lambda^4}{J^4} y = 0.$$