
Einladung zu einem Vortrag
im Rahmen des DK-Seminars des Karl Popper Kollegs von

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zum Thema
**Non-unique factorizations in rings of integer-valued
polynomial**

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Kurzfassung:

For a domain D with quotient field K , the ring of integer-valued polynomials on D , $\text{Int}(D) = \{f \text{ in } K[x] \mid \text{for all } a \text{ in } D, f(a) \text{ in } D\}$ in general does not have unique factorization of elements. In this talk, we discuss non-unique factorizations in $\text{Int}(Z)$ where Z is the ring of integers.

We present two main results. First, for any finite multiset N of natural numbers greater than 1, there exists a polynomial f in $\text{Int}(Z)$ which has exactly $|N|$ essentially different factorizations of the prescribed lengths. In particular, this implies that every finite non-empty set N of natural numbers greater than

1 occurs as a set of lengths of a polynomial f in $\text{Int}(Z)$. Second, we show that the multiplicative monoid of $\text{Int}(Z)$ is not a transfer Krull monoid.

Furthermore, we show that both results hold in $\text{Int}(D)$ where D is a Dedekind domain with infinitely maximal ideals of finite index.

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