ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

Algebraic structure changes when raising to a power

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https://classroom.aau.at/math-stat

ABSTRACT

While algebraic structures are the main objects of study of modern algebra, they are present in many mathematical disciplines. This has not only been a thriving force for the development of the field of algebra itself, it has also led to additional perspectives in other fields by focusing on structural similarities. It allows one to translate and adopt methods and tools from different mathematical fields which are based on the given structure.

In this context, structural decompositions are typically used to characterize objects of interest in terms of their "building blocks" as well as the reduction of questions to potentially easier-to-handle cases. The factorization of integers into prime powers, polynomials into irreducible factors, and the decomposition of algebraic varieties into their irreducible components are only some of many structural decompositions.

The objects of interest in this talk are elements and ideals of commutative rings. Focus is set on the fact that the indecomposable building blocks of an element or ideal are subject to change when raising it to a power. We discuss these

phenomena in light of different mathematical viewpoints.

We hope to see you there!