Some recent results on graded and filtered rings

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Abstract

In the first part of this talk, inspired by recent developments in the theory of bimodules in crossed product von Neumann algebras, we will introduce a notion of 'strong simplicity' for group graded rings. We will give a characterization of strongly group graded rings with this property and show how this, in certain cases, can be used to describe their subrings.

In the second part of this talk, we will introduce non-associative Ore extensions which generalize the classical (associative) Ore extension construction. We will show how to encode a dynamical system, arising from a homeomorphism on a compact Hausdorff space, into a non-associative differential polynomial ring.

The second part of this talk is based on joint work with Patrik Nystedt and Johan Richter.

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