Experimentelle und konstruktive Algebra

Kolloquiumsvortrag

Dienstag, 18. Oktober 2016, 14:00 Uhr, SeMath

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Ore localization and general saturation

Localizing a commutative ring at a multiplicative subset is an important and well-understood tool in the study of commutative rings. For non-commutative rings, the concept of Ore localization at (left) Ore sets is a generalization that retains most of the properties of classical commutative localization.

After recalling the construction and properties of Ore localization we will introduce the notion of general saturation, which plays an important role in the structure theory of localized rings: we will give a characterization of the units as well as criteria concerning isomorphisms of localizations.

Similarly to the commutative case we can define Ore localization of modules over non-commutative rings. In this context we apply general saturation to consider the local closure of a submodule, which is closely connected with the notions of extending and contracting submodules and has far-reaching applications in algebraic analysis.

Finally we consider the special case of local torsion of a module, which is the local closure of its zero submodule. As a generalization of the classical notion of torsion it gives a deeper insight into the torsion structure of modules.

Wir laden alle Interessierten herzlich ein.