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Leibniz
Universität
Hannover

Oberseminar zur Algebra und Algebraischen Kombinatorik

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(Universität Bonn)

"On mutation classes of quivers with constant number of arrows and derived equivalences"

The BGP reflection is a combinatorial operation on quivers defined at vertices which are sinks or sources and preserves the number of arrows. From a representation-theoretic perspective, it induces derived equivalence between the path algebras. The Fomin-Zelevinsky mutation extends this operation to arbitrary vertices on a combinatorial level, whereas the QP mutation introduced by Derksen, Weyman and Zelevinsky does this algebraically. However, in general the number of arrows is no longer preserved and the Jacobian algebras are not necessarily derived equivalent.

In this talk we will characterize all the quivers with the property that performing arbitrary sequences of mutations does not change their number of arrows. It turns out that these quivers arise from triangulations of certain marked surfaces in the sense of Fomin, Shapiro and Thurston.

This combinatorial property has also a representation-theoretic counterpart: to each such quiver there is naturally associated potential such that performing arbitrary sequences of QP mutations does not change the derived equivalence class of the corresponding Jacobian algebra.

Most of these Jacobian algebras are finite-dimensional and gentle, but some of them are infinite-dimensional and locally gentle as introduced by Bessenrodt and Holm. The latter algebras resemble the 3-Calabi-Yau algebras despite not being so.

Montag, 28.11.2011
ab 14:30 Uhr, Raum a410

Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

gez. Prof. Dr. C. Bessenrodt

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