Tame surface algebras

Karin Erdmann
University of Oxford

(Joint work with Andrzej Skowroński.) We investigate tame symmetric algebras related to surface algebras, which generalize tame blocks of group algebras. The project divides into three parts, with weighted surface algebras as the general frame. An algebra is defined to be of generalized quaternion type if it is tame symmetric and all simple modules have Ω-period four. We classify algebras of generalized quaternion type with 2-regular quiver and show that they are almost the same as weighted surface algebras. We introduce and classify algebras of generalized dihedral type. The definition is algebraic, and there is a geometric version in terms of degenerations of weighted surface algebras. The third part (in progress) are algebras of generalized semidihedral type, based on partial degenerations of weighted surface algebras.

References

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