

Sefi Ladkani

Universität Bonn

On symmetric Jacobian algebras

We show that Jacobian algebras of quivers with potentials that are finite-dimensional and symmetric enjoy remarkable structural properties:

- All members within a mutation class are derived equivalent;
- Their stable module categories are Ω -periodic with period dividing 4 (hence also τ -periodic);
- The associated cluster categories are weakly 0-Calabi-Yau;
- The potentials are almost never rigid.

In addition, we provide two kinds of infinitely many new families of such algebras:

1. 3-preprojective algebras of algebras of global dimension 2 that are fractionally Calabi-Yau of certain CY-dimensions;
2. Jacobian algebras of quivers with potentials arising from triangulations of closed surfaces.

The latter algebras degenerate to Brauer graph algebras and yield new families of tame symmetric algebras with periodic modules and singular Cartan matrices, thus being counterparts to Erdmann's algebras of quaternion type.