

Representations of the affine BMW algebra

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The BMW algebra is a deformation of the Brauer algebra, and has the Hecke algebra of type A as a quotient. Its specializations play a role in types B, C, D akin to that of the symmetric group in Schur-Weyl duality. One can enlarge these algebras by a commutative subalgebra X to an affine, or annular, version. Unlike the affine Hecke algebra, the affine BMW algebra is not of finite rank as a right X -module, so induction functors are ill-behaved, and many of the classical Hecke-theoretic constructions of simple modules fail. However, the affine BMW algebra still has a nice class of X -semisimple, or calibrated, representations, that don't necessarily factor through the affine Hecke algebra.

I will discuss Walker's TQFT-motivated 2-handle construction of the X -semisimple, or calibrated, representations of the affine BMW algebra.