

***ON THE STRUCTURE OF THE AFFINE ASYMPTOTIC
HECKE ALGEBRAS***

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Abstract: According to a conjecture of Lusztig, the asymptotic affine Hecke algebra should admit a description in terms of the Grothendieck group of sheaves on the square of a finite set equivariant under the action of the centralizer of a nilpotent element in the reductive group. A weaker form of this statement, allowing for possible central extensions of stabilizers of that action, has been proved by Bezrukavnikov and Ostrik. In this work we give a counterexample to the above conjecture of Lusztig, showing that nontrivial central extensions do arise, and thus the above weaker statement is optimal. This is joint work with Roman Bezrukavnikov and Stefan Dawydiak.