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Equivariant Kazhdan-Lusztig polynomials of q -niform matroids. (English) Zbl 1417.05024
Algebr. Comb. 2, No. 4, 613-619 (2019).

Summary: We study q -analogues of uniform matroids, which we call q -niform matroids. While uniform matroids admit actions of symmetric groups, q -niform matroids admit actions of finite general linear groups. We show that the equivariant Kazhdan-Lusztig polynomial of a q -niform matroid is the unipotent q -analogue of the equivariant Kazhdan-Lusztig polynomial of the corresponding uniform matroid, thus providing evidence for the positivity conjecture for equivariant Kazhdan-Lusztig polynomials.

MSC:

- 05B35 Combinatorial aspects of matroids and geometric lattices
- 05C31 Graph polynomials
- 52B40 Matroids in convex geometry (realizations in the context of convex polytopes, convexity in combinatorial structures, etc.)
- 20C33 Representations of finite groups of Lie type

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Keywords:

Kazhdan-Lusztig polynomial; matroid; unipotent representation

Full Text: [DOI](#) [arXiv](#)

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