Williamson, Geordie

The Hodge theory of the Hecke category. (English) Zbl 1402.20010


In this really nicely written survey, the author presents an interesting outline on the Hodge theory and their applications in the context of combinatorial problems and the Hecke category. Starting with the combinatorial Hodge theory, the author explains how one can prove that the coefficients of characteristic polynomials associated to simple matroids form log-concave sequences, and this generalises a similar log-concavity property for the chromatic polynomials of graphs. Afterwards, the author presents an interesting positivity phenomenon on Kazhdan-Lustig basis for Hecke algebras and then he focuses on a link between Hodge theory and Soergel bimodules.

For the entire collection see Zbl 1396.00017.

Reviewer: Piotr Pokora (Kraków)

MSC:

20C08 Hecke algebras and their representations
20F55 Reflection and Coxeter groups (group-theoretic aspects)
14C30 Transcendental methods, Hodge theory (algebro-geometric aspects)
14N20 Configurations and arrangements of linear subspaces

Keywords:

Coxeter groups; polytopes; matroids; Soergel bimodules; combinatorial Hodge theory; Hecke category

Full Text: DOI arXiv

References:


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