
JOSE ANTONIO DE LA PEÑA, UNAM, México DF

Spectra of Coxeter polynomials

Let A be a finite dimensional algebra over an algebraically closed field k . Assume A has finite global dimension. The Auslander–Reiten translation τ_A defines an automorphism in the derived category of the module category mod_A . The linear transformation induced on the Grothendieck group is called the Coxeter transformation and the associated characteristic polynomial f_A is the Coxeter polynomial of A . The spectra of the Coxeter polynomial is related with important properties of the algebra: the structure of the Auslander–Reiten quiver of A , the growth of the iterated translations $\tau^n[X]$ for indecomposable modules X and other facts. For hereditary algebras $A = kQ$ with Q a quiver, f_A is known to be closely related to the characteristic polynomial of the adjacency matrix of the underlying graph of Q . We study new classes of algebras where the spectra of f_A can be described by means of characteristic polynomials of adjacency matrices of graphs.