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Bi-Perron numbers and the Coxeter transformation

A bi-Perron number is a positive real algebraic with all Galois conjugates contained in the annulus with outer radius the bi-Perron number itself and inner radius its inverse, with at most one Galois conjugate on either boundary of the annulus. Among bi-Perron numbers, we characterise those with real or unimodular Galois conjugates as the ones that admit a power which is the spectral radius of a bipartite Coxeter transformation associated with a bipartite Coxeter diagram with simple edges. This is joint work with Joshua Pankau.