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Matt S Davis* (davis@math.hmc.edu). *Representations of rank two affine Hecke algebras at roots of unity.*

We will describe a method for classifying the irreducible representations of the crystallographic rank two affine Hecke algebras using algebraic and combinatorial methods, for all possible values of q . The focus is on the case when q is a root of unity of small order. The classification is based mostly on weight spaces of modules and the way in the specialization for q affects the distribution of weight spaces among the irreducibles for each central character. (Received September 22, 2011)