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**Van C. Nguyen\*** (vnguyen@usna.edu), Department of Mathematics, United States Naval Academy, Annapolis, MD 21402. *An attempt to character theory for finite-dimensional Hopf algebras.*

The McKay matrix  $M_V$  records the result of tensoring the simple modules with a finite-dimensional module  $V$ . In the case of finite groups, the eigenvectors for  $M_V$  are the columns of the character table, and the eigenvalues come from evaluating the character of  $V$  on conjugacy class representatives. In this talk, we will explore what can be said about such eigenvectors when the McKay matrix is determined by modules over an *arbitrary* finite-dimensional Hopf algebra. We illustrate the results for the small quantum group  $u_q(\mathfrak{sl}_2)$ , where  $q$  is a root of unity (and generally for the Drinfeld double  $D_n$  of the Taft algebra). In these examples, the eigenvalues and eigenvectors for these matrices can be described in terms of several kinds of Chebyshev polynomials.

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