1046-18-1057   **Alexander E Hoffnung*** (`alex@math.ucr.edu`). *A categorification of Hecke algebras.*

Given a Dynkin diagram and the finite field F_q, where q is a prime power, we get a finite algebraic group G_q. We will show how to construct a categorification of the Hecke algebra $H(G_q)$ associated to this data. This is an example of the Baez/Dolan program of "Groupoidification", a method of promoting vector spaces to groupoids and linear operators to spans of groupoids. For example, given the A_2 Dynkin diagram, for which $G_q = SL(3,q)$, the spans over the G_q-set of complete flags in F_q^3 encode the relations of the Hecke algebra associated to $SL(3,q)$. Further, we will see how categorified relations of the Hecke algebra correspond to incidence relations in projective plane geometry. (Received September 14, 2008)