

1077-05-838

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A  $W$ -graph for a Coxeter group  $W$  is a combinatorial structure that encodes a module for the group algebra of  $W$ , or more generally, a module for the associated Iwahori-Hecke algebra. Of special interest are the  $W$ -graphs that encode the action of the Hecke algebra on its Kazhdan-Lusztig basis. In this talk we will describe a general method for constructing all admissible  $W$ -cells for a given finite Weyl group  $W$ ; this is a class of  $W$ -graphs that includes the cells (i.e., strongly connected components) of the Kazhdan-Lusztig  $W$ -graph  $\Gamma_{KL}$ . For example it turns out that there are 73 admissible  $E_6$ -cells (21 occur in  $\Gamma_{KL}$ ) and 175 admissible  $F_4$ -cells (17 occur in  $\Gamma_{KL}$ ), while for  $W = A_n$  for  $n \leq 9$ , the only admissible cells are the Kazhdan-Lusztig cells. (Received September 13, 2011)