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The mirabolic Hecke algebra

The Iwahori-Hecke algebra of the symmetric group is the convolution algebra arising from the variety of pairs of complete flags over a finite field. Considering convolution on the space of triples of two flags and a vector we obtain the mirabolic Hecke algebra, which had originally been described by Solomon. We will see a new presentation of this algebra which shows that it is a quotient of a cyclotomic Hecke algebra. This lets us recover Siegel's results about its representations, as well as proving new 'mirabolic' analogues of classical results about the Iwahori-Hecke algebra.