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Gordan Savin*, Department of Mathematics, 155 S 1400 E, Salt Lake City, UT 84112, and **Wee teck Gan**. *Weil representation and Hecke algebras for metaplectic groups*.

The Iwahori Hecke algebra was described, in terms of generators and relations, in a beautiful work of Iwahori and Matsumoto over 40 years ago. This algebra has a canonical basis consisting of characteristic functions of double cosets. This important feature is missing when one wants to extend the theory to non-linear groups. In this work we show how the Weil representation can be used to construct a basis of the algebra for the metaplectic group i.e. two fold central extension of the symplectic group. (Received July 29, 2011)