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Christian A Zorn* (czorn@math.ohio-state.edu), 630 Mathematics Tower, 231 West 18th Avenue, Columbus, OH 43210. *Theta dichotomy for the rank 2 metaplectic group*. Preliminary report.

Let F be a p -adic field with odd residue characteristic. For any given quadratic character χ of F^\times , there exists two odd-dimensional Witt towers corresponding to the given quadratic character.

Now denote G_n to be the rank n symplectic group and let \tilde{G}_n be its metaplectic cover. Given a genuine irreducible admissible representation of \tilde{G}_n , one can construct the local theta lifts to representations of orthogonal groups attached to the spaces in the Witt towers outlined above.

The **theta dichotomy conjecture** states that given a pair of odd-dimensional Witt towers associated to a quadratic character χ and a genuine irreducible admissible representation π of \tilde{G}_n that π has a non-vanishing theta lift to the orthogonal group for exactly one of the two quadratic spaces of dimension $2n + 1$ in the given Witt towers.

When $n = 1$, this is a result of Waldspurger, who also relates the non-vanishing of theta lifts for π to certain epsilon factors of local L -factors associated to π . We would like to discuss some progress in proving analogous results in the case that $n = 2$ and π is a constituent of the unramified principal series for \tilde{G}_2 . (Received August 25, 2008)