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**Christian A Zorn\*** ([czorn@math.umd.edu](mailto:czorn@math.umd.edu)), Mathematics Building, University of Maryland, College Park, MD 20740. *Computing local L-factors for principal series representations of  $Sp_4(F)$  and  $\widetilde{Sp}_4(F)$  over p-adic fields.* Preliminary report.

An important goal in the representation theory of reductive groups is computing L-factors attached to their admissible representations. One useful tool for this is the doubling method of Piatetski-Shapiro and Rallis. Applied to the adelic points of a reductive group  $G$ , this Rankin-Selberg type integral allows one to compute the desired L-factors. Moreover, by unfolding in a standard way, the integral will factor as a product of local integrals. In this talk, we will demonstrate a variant of this method (inspired by the work of Kudla, Rapoport and Yang) that explicitly computes L-factors belonging to constituents of the unramified principal series for  $Sp_4(F)$  over a p-adic field. Furthermore, we extend the method to certain degenerate principal series representations of the metaplectic group  $\widetilde{Sp}_4(F)$ . (Received September 25, 2006)