1046-11-49 **Wendell Ressler*** (wendell.ressler@fandm.edu), Department of Mathematics, PO Box 3003, Lancaster, PA 17604-3003. *A Hecke Correspondence Theorem for Automorphic Integrals with Symmetric Rational Period Functions on the Hecke Groups.*

Marvin Knopp developed the theory of automorphic integrals, which generalize automorphic forms; each automorphic integral has an additional period function in its automorphic relation. The period functions satisfy relations that arise from the underlying group relations. Knopp showed that entire automorphic integrals with rational period functions satisfy a Hecke correspondence theorem, provided the rational period functions have poles only at 0 or ∞. For other automorphic integrals each corresponding Dirichlet series has a functional equation with a remainder term that arises from the nonzero poles of the rational period function.

In this paper we prove a Hecke correspondence theorem for a class of automorphic integrals with rational period functions on the Hecke groups. We restrict our attention to automorphic integrals of weight that is twice an odd integer and to rational period functions that satisfy a symmetry property we call "Hecke-symmetry." We explicate the relationship between the structure of the rational period functions and the corresponding remainder terms. Each remainder term satisfies two relations (the second of which is new in this paper) corresponding to the two relations for the rational period function. (Received July 09, 2008)