

1019-11-97

Sharon Anne Garthwaite* (garthwai@math.wisc.edu), UW Math Dept., 480 Lincoln Dr.,
Madison, WI 53706. *The $\omega(q)$ mock theta function and vector-valued Maass-Poincaré series.*

In 1920 Ramanujan wrote to Hardy about his discovery of the mock theta functions. In the years since, there has been much work in understanding the transformation properties and asymptotic nature of these functions. Recently, Zwegers proved a relationship between mock theta functions and vector-valued modular forms, and Bringmann and Ono used the theory of Maass forms and Poincaré series to prove an exact formula for the coefficients of the $f(q)$ mock theta function, as conjectured by Andrews. Here we build upon these results, using the theory of vector-valued modular forms and Poincaré series to prove an exact formula for the coefficients of the $\omega(q)$ mock theta function. We then finish with a discussion of using this method to study a larger class of vector-valued Maass-Poincaré series. (Received August 08, 2006)