

1093-11-278

Karl E Mahlburg* (mahlburg@math.lsu.edu), Lockett Hall, Baton Rouge, LA 70803, and
Kathrin Bringmann. *Schur's partition theorem and mixed mock modular forms.*

I will discuss families of partitions with gap conditions that were introduced by Schur and Andrews, and describe their intrinsic connections to combinatorial q -series and automorphic forms. The generating functions for these families naturally lead to fundamental identities for theta functions and Hickerson's universal mock theta function. This provides a very general answer to a conjecture of Andrews, in which he predicted the modularity of the generating function for Schur's partitions. As a final application, we prove the striking result that the universal mock theta function can be expressed as a conditional probability in a certain natural probability space with an infinite sequence of independent events. (Received August 18, 2013)