

Multiple Basic Hypergeometric Series and Mock Theta Functions

张之正

洛阳师范学院

The theory of basic hypergeometric series consists of many known summation and transformation formulas. These basic hypergeometric series identities frequently appear in combinatorics and in related area such as number theory, physics, and representation theory of Lie algebras. Multiple basic hypergeometric series associated to the unitary group A_n (or $U(n+1)$), C_n and D_n have been investigated by various authors. In this talk, we give

1. $U(n+1)$ analogue of Agarwal-Andrews-Bressoud-Bailey lattice and its applications;
2. $U(n+1)$, C_n and elliptic generalizations of WP-Bailey pairs and their applications
3. Mock theta functions in terms of q -hypergeometric double sums and multiple mock theta functions.