

1035-33-1612

James McLaughlin (jmclaughlin@wcupa.edu), Department of Mathematics, West Chester University, West Chester, PA 19383, **Andrew V Sills** (asills@georgiasouthern.edu), Department of Mathematical Sciences, P.O. Box 8093, Statesboro, GA 30460-8093, and **Peter J Zimmer*** (pzimmer@wcupa.edu), Department of Mathematics, West Chester University, West Chester, PA 19383. *“Lifting” Bailey pairs to WP-Bailey pairs.*

A pair of sequences (α_n, β_n) , with $\alpha_0 = 1$ and

$$\beta_n = \sum_{r=0}^n \frac{\alpha_r}{(q; q)_{n-r}(aq; q)_{n+r}}$$

is called a Bailey pair. L. Slater used Bailey pairs to find 130 identities of the Rogers-Ramanujan type. G. Andrews extended the definition of a Bailey pair by setting

$$\beta_n(a, k) = \sum_{j=0}^n \frac{(k/a; q)_{n-j}(k; q)_{n+j}}{(q; q)_{n-j}(aq; q)_{n+j}} \alpha_j(a, k)$$

Such a pair $(\alpha_n(a, k), \beta_n(a, k))$ was termed a *WP-Bailey pair*. Note that setting $k = 0$ in a WP-Bailey pair produces a Bailey pair. We will discuss the reverse problem of “lifting” a Bailey pair to a WP-Bailey pair.

(Received September 20, 2007)