

1152-68-196

**Carsten Schneider\*** ([cschneid@risc.jku.at](mailto:cschneid@risc.jku.at)), Johannes Kepler University Linz, Altenberger  
Str. 69, 4040 Linz, Austria. *The summation package Sigma and (q-)applications.*

The summation package Sigma, based on an algorithmic theory of difference rings, can assist the user to simplify complicated multiple sums to simpler expressions in terms of indefinite nested sums and products. In the last years, this toolbox has been applied successfully for sums defined over hypergeometric products. However, due to its generality, these tools work also for q-hypergeometric products or multibasic products. In this talk I will demonstrate these possibilities by concrete examples. (Received September 04, 2019)