

1116-33-1992

Michael J Schlosser* (michael.schlosser@univie.ac.at), University of Vienna, Faculty of Mathematics, Oskar-Morgenstern-Platz 1, 1090 Vienna, Austria. *New multivariate generalizations of Ramanujan's ${}_1\psi_1$ summation formula.*

We derive several explicit summations for multivariable basic hypergeometric series. The series we are dealing with are characterized by having a special determinant as a factor in the summand and can be associated to the root system A_n . Among our results are new multivariate extensions of Ramanujan's ${}_1\psi_1$ summation formula. We compare these to existing results in the literature such as a closely related multivariate ${}_1\psi_1$ summation by Aomoto, and a similar ${}_1\psi_1$ summation recently given by Warnaar (which is contained in one of our formulae as a special case). Already the one-variable ${}_1\psi_1$ summation was described by Hardy as “a remarkable formula with many parameters”. Our multivariate extensions of this identity have even more parameters. This work is dedicated to the memory of Mizan Rahman who felt perfectly comfortable with and enjoyed formulae with many parameters. (Received September 21, 2015)