

# HYPERGEOMETRIC FUNCTIONS OF TYPE $BC$ AND STANDARD MULTIPLICITIES

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## ABSTRACT

Let  $\Sigma$  be a root system of type  $BC$ , and let  $m = (m_s, m_m, m_l)$  be a multiplicity function, which satisfies  $m_m > 0$ ,  $m_s + 2m_l > 0$ . Notice that the multiplicity function can assume non-positive values. We study the hypergeometric functions associated to such a standard multiplicity function in detail. For such functions, we establish positivity properties and sharp estimates which imply a characterization of the bounded hypergeometric functions which extend the known results for non-negative multiplicity functions. Our results also extend the known properties of the spherical functions on a hermitian symmetric space associated to one dimensional representations of the maximal compact subgroup. (joint work with Angela Pasquale)

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