GAKKOTOSHO
TOKYO JAPAN

UNIFIED INTEGRALS INVOLVING GENERALIZED HYPERGEOMETRIC R-FUNCTION

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Abstract. The generalized hypergeometric functions, notably the G and H functions, are renowned for their numerous applications in probability distribution and statistical theory. Rathie introduced the R-function as a generalization of Fox's H-function, aiming to delve deeper into issues concerning statistical hypothesis testing. Integrals, both definite and indefinite, find extensive usage across diverse disciplines including mathematics, physics, engineering, economics, and beyond. Our focus here lies in exploring specific integral formulations of the R-function, or generalized hypergeometric function. Furthermore, we will examine certain special cases within this context.