South East Asian J. of Mathematics and Mathematical Sciences
Vol. 20, No. 3 (2024), pp. 265-278

DOI: 10.56827/SEAJMMS.2024.2003.20 **ISSN (Online): 2582-0850**

ISSN (Print): 0972-7752

COMPOSITION OF SPECIAL FUNCTIONS ON CERTAIN INTEGRAL FORMULAS

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(**Received:** *Sep. 11, 2024* **Accepted:** *Dec. 28, 2024* **Published:** *Dec. 30, 2024)*

Abstract: In this study, we will explore six novel generalized integral formulas that incorporate the combination of k-Struve and Mittag-Leffler functions. We will derive these expressions in the hypergeometric function form. Additionally, we will address specific cases by employing appropriate substitutions. These results are very promising and adaptable, with wide applications in the field of applied science, engineering, and technological problem solving.

Keywords and Phrases: Mac Robert integral, Oberhettinger integral, Lavoie-Trottier integral, K-Struve function, Mittag-Leffler function.

2020 Mathematics Subject Classification: 42A38, 42B10,46F12.

1. Introduction

In the realm of science and technology, integral formulas prove highly valuable for solving pertinent problems. It's important to note that numerous integral methods have been established; however, practical constraints, such as time limitations, can impact their application. Numerous authors, including Brychkov [5], Choi et al. [7], Agarwal et al. [1], Choi and Agarwal [8], Manaria et al. [16], Khan, Kashmin [13], and Nisar et al. [19], have worked on creating a diverse range of special functions that play a crucial role in a multitude of integral formulas and their specific instances [9, 25, 27].