

## SOME INTEGRALS INVOLVING STRUVE AND MODIFIED STRUVE FUNCTIONS

**Salahuddin and M. P. Chaudhary\***

Department of Mathematics,  
AMET University, Kanathur,  
Chennai, Tamil Nadu 603 112, INDIA

E-mail : vsludn@gmail.com

\*International Scientific Research and Welfare Organization,  
(Albert Einstein Chair Professor of Mathematical Sciences)  
New Delhi - 110018, INDIA

E-mail : dr.m.p.chaudhary@gmail.com

(**Received:** Aug. 19, 2024 **Accepted:** Dec. 08, 2024 **Published:** Dec. 30, 2024)

**Abstract:** In this paper, authors establish eight definite integral involving Struve function and modified Struve functions using basic properties of definite integrals and its techniques. Several closely-related results such as (for example) Generalized hypergeometric functions are also considered. These results provide some extensions in the scientific literature. Furthermore, these integrals play a significant role in the applied Mathematics.

**Keywords and Phrases:** Struve function, hypergeometric function.

**2020 Mathematics Subject Classification:** 33B50, 33C05, 33C10, 33D50, 33D60, 33D67.

### 1. Introduction

Struve functions are explication of the heterogeneous Bessel's differential equation:

$$w^2 \frac{d^2 p}{dw^2} + w \frac{dp}{dw} + (w^2 - \eta^2)p = \frac{4\left(\frac{w}{2}\right)^{\eta+1}}{\sqrt{\pi} \Gamma\left(\eta + \frac{1}{2}\right)} \quad (1.1)$$