

## ON A REDUCTION FORMULA FOR THE KAMPÉ de FÉRIET FUNCTION

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### Abstract

The aim of this short research note is to provide a reduction formula for the Kampé de Fériet function  $F_{g:2;0}^{h:2;0}[-x, x]$  by employing a new summation formula for Clausen's series  ${}_3F_2[1]$  obtained recently by the authors [Miskolc Math. Notes **10**(2), 145–153, 2009.]

**Keywords:** Clausen's series  ${}_3F_2$ , Euler's transformation for  ${}_2F_2$ , Kampé de Fériet function, Kummer-type I transformation for  ${}_2F_2$ , summation formula.

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### 1. Introduction and results required

Recently Paris [9] established a Kummer-type I transformation formula for the generalized hypergeometric function  ${}_2F_2[x]$ , namely

$$(1.1) \quad {}_2F_2 \left[ \begin{matrix} a, c+1 \\ b, c \end{matrix}; x \right] = e^x {}_2F_2 \left[ \begin{matrix} b-a-1, f+1 \\ b, f \end{matrix}; -x \right] \quad x \in \mathbb{C},$$

where

$$f = \frac{c(1+a-b)}{a-c}.$$

Equation (1.1) is seen to be analogous to the well-known and much employed Kummer's first transformation for the confluent hypergeometric function

$${}_1F_1 \left[ \begin{matrix} a \\ b \end{matrix}; x \right] = e^x {}_1F_1 \left[ \begin{matrix} b-a \\ b \end{matrix}; -x \right].$$

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