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MODIFIED TYPE-1 DIRICHLET AVERAGES OF THE THREE-PARAMETER MITTAG-LEFFLER FUNCTION THROUGH FRACTIONAL INTEGRALS AND SPECIAL FUNCTIONS

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Abstract: The classical power means of Hardy, Littlewood and Polya, which contains the harmonic mean, arithmetic mean and geometric mean, is generalized to the Y-mean and hypergeometric mean by Carlson. Carlson's hypergeometric mean is to average a function over a type-1 Dirichlet measure, and this term in the current literature is known as the Dirichlet average of that function. The present paper introduces a new Dirichlet average, associated with the modified type-1 Dirichlet measures called modified type-1 Dirichlet averages. This paper also investigates the modified type-1 Dirichlet averages of a three-parameter Mittag-Leffler type function, which is expressed using Riemann-Liouville integrals and hypergeometric functions with multiple variables.

Keywords and Phrases: Dirichlet average, generalized type-1 and type-2 Dirichlet models, Mittag-Leffler functions, Riemann-Liouville fractional integrals, hypergeometric functions of one and many variables.

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