

Peter J. Larcombe and Sam T. O'Neill

A Generating Function Approach to the Automated Evaluation of Sums of Exponentiated Multiples of Generalized Catalan Number Linear Combinations,

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Abstract

Based on a previous technique deployed in some specific low order cases, we develop an automated computational procedure to evaluate instances within a class of infinite series comprising exponentiated multiples of generalized linear combinations of Catalan numbers. The methodology is explained, and new results given.