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Chokri Cherif* (ccherif@bmcc.cuny.edu), BMCC-CUNY, 199 Chambers street, Room-N532, New York, NY 10007. *An Alternative Method to Partial Fraction Decomposition of Integral Computation.*

In this work, we propose an alternative method to the lengthy partial fraction decomposition used in standard calculus textbooks to compute the indefinite integral of a family of rational functions that have the form $f_n(x) = \frac{(x^{2n} - nx^{n-1})}{x^{2(n+1)} + 2x^{n+1} + 1}$. The algorithm utilized in this method can be used to enhance software dealing with the computation of integrals. An interesting integral $\int \frac{1}{1+x^4} dx$ mentioned in calculus textbooks as challenging to solve can be easily evaluated using the alternative method. We will also use this method to evaluate terms of a particular sequence that could be very difficult to compute using classical methods. (Received September 23, 2005)