

ON WEIGHTED FRACTIONAL INEQUALITIES USING GENERALIZED KATUGAMPOLA FRACTIONAL INTEGRAL OPERATOR

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Abstract. In this paper, we obtain some new weighted fractional inequalities which are presented by M. Houas in the paper (Certain weighted integral inequalities involving fractional hypergeometric operator, Scientia, series A: Mathematical Science 27(2016),87-97), using generalized Katugampola fractional integral operator.

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REFERENCES

- [1] T. A. ALJAAIDI AND D. B. PACHPATTE, *Osome Grüss-type inequalities using generalized Katugampola fractional integral*, AIMS MATH., 5 (2), (2020), 1011–1024. doi :10.3934/math.2020070.
- [2] G. A. ANASTASSIOU, *Fractional Differentiation Inequalities*, Springer Publishing Company, New York, NY, 2009.
- [3] D. BALEANU, S. D. PUROHIT AND P. AGARWAL, *On fractional integral inequalities involving hypergeometric operators*, Chin. J. Math., Article ID609476, 2014,(2014), 1–5. <https://doi.org/10.1155/2014/609476>.
- [4] V. L. CHINCHANE AND D. B. PACHPATTE, *On some integral inequalities using Hadamard fractional integral*, Malaya J. Mat., 1 (1), (2012), 62–66.
- [5] V. L. CHINCHANE, *On Chebyshev type inequalities using generalized k -fractional integral operator*, Progr. Fract. Differ. Appl., 3 (3), (2017), 219–226.
- [6] V. L. CHINCHANE AND D. B. PACHPATTE, *On some Grüss-type fractional inequalities using Saigo fractional integral operator*, Journal of Mathematics, Article ID 527910, 2014 (2014), 1–9. <https://doi.org/10.1155/2014/527910>.
- [7] L. CURIEL AND L. GALUE, *A generalization of the integral operators involving the Grüss hupergeometric function*, Rev. Tech. Ingr. Univ. Zulia, 1 (19), (1996), 17–22.
- [8] Z. DAHMANI, *The Riemann-Liouville operator to generate some new inequalities*, Int. J. Nonlinear Sci., 12 (4) (2011), 452–455.
- [9] Z. DAHMANI, *Some results associate with fractional integrals involving the extended Chebyshev*, Acta Univ. Apulensis Math. Inform., 27 (2011), 217–224.
- [10] M. HOUAS, *Certain weighted integralinequalities involving the fractional hypergeometric operators*, Scientia Series A: Mathematical Science, 27(2016), 87–97.
- [11] A. A. KILBAS, H. M. SRIVASATAVA AND J. J. TRUJILLO, *Theory and Application of Fractional Differential Equation*, North-Holland Mathematical Studies Vol. Elsevier Science Publishers, Amsterdam, London and New York, 2006.
- [12] U. N. KATUGAMPOLA, *A new approach to generalized fractional derivatives*, Bull. Math. Anal. Appl., 6 (4), (2014), 1–15.
- [13] U. N. KATUGAMPOLA, *new fractional integral unifying six existing fractional integral*, arXiv:1612.08596 [math.CA] (2016), 1–6.
- [14] V. KIRYAKOVA, *On two Saigo's fractional integral operator in the class of univalent functions*, Fract. Calc. Appl. Anal., 9 (2), (2006).
- [15] V. S. KIRYAKOVA, *Generalized Fractional Calculus and Applications*, Pitman Res. Notes in Math. Ser., 301, Longman, Harlow, 1994. <https://doi.org/10.1017/S0013091500006325>.

- [16] A. B. NALE, S. K. PANCHAL AND V. L. CHINCHANE, *Certain fractional integral inequalities using generalized Katugampola fractional integral operator*, Malaya J. Mat., 3 (8), (2020), 809–814.
- [17] A. R. PRABHAKARAN AND K. SRINIVASA RAO, *Saigo operator of fractional integration of Hypergeometric functions*, Int. J. Pure Appl. Math., 81 (5), (2012), 755–763.
- [18] M. SAIGO, *A remark on integral operators involving the Gauss hypergeometric functions*, Math. Rep. Kyushu Univ, 11, (1978), 135.
- [19] E. SET, J. CHOI AND L. MUMCU, *Chebyshev type inequalities involving generalized Katugampola fractional integral operators*, Tamkang J. Mathe., 4 (50), (2019), 381–390.
- [20] H. M. SRIVASTAVA AND J. CHOI, *Zeta and q -Zeta function and associated series and integral*, Elsevier Science Publishers, Amsterdam, Landon, New York, 2012.
- [21] J. TARIBOON, S. K. NTOUYAS AND W. SUDSUTAD, *Some New Riemann-Liouville Fractional Integral Inequalities*, Int. J. Math. Math. Sci., Article ID 869434, 2014 (2014), 1–6.
- [22] J. VANTERLER DA C. SOUSA D. S. OLIVEIRA E. CAPELAS DE OLIVEIRA, *Grüss- type inequalities by means of generalized fractional integrals*, Bull Braz. Math. Soc., New 50, (2019), 1029–1047.