

A NOTE ON GRÜSS TYPE INEQUALITIES VIA CAUCHY'S MEAN VALUE THEOREM

B. G. PACHPATTE

Abstract. The main aim of the present note is to establish two new weighted Grüss type integral inequalities by using a fairly elementary analysis.

Mathematics subject classification (2000): 26D15, 26D20.

Key words and phrases: Grüss type inequalities, Cauchy's mean value theorem, weighted integral inequalities, integrable function.

REFERENCES

- [1] S. S. DRAGOMIR, *Some integral inequalities of Grüss type*, Indian J. Pure and Appl. Math. 31(2000), 379–415.
- [2] S. S. DRAGOMIR, *Some Ostrowski type inequalities via Cauchy's mean value theorem*, RGMIA Research Report Collection (Supl.) 6(2003), 1–11, Art. 9.
- [3] A. M. FINK, *A treatise on Grüss inequality*, *Analytic and Geometric Inequalities and Applications*, T. M. Rassias and H. M. Srivastava (eds.), Kluwer Academic Publishers, Dordrecht 1999, 93–113.
- [4] G. GRÜSS, *Über das maximum des absoluten Betrages von*

$$\frac{1}{b-a} \int_a^b f(x) g(x) dx - \frac{1}{(b-a)^2} \int_a^b f(x) dx \int_a^b g(x) dx,$$

Math. Z. 39(1935), 215–226.

- [5] D. S. MITRINOVIĆ, J. E. PEČARIĆ AND A. M. FINK, *Classical and new inequalities in Analysis*, Kluwer Academic Publishers, Dordrecht, 1993.
- [6] B. G. PACHPATTE, *On Grüss type inequalities for double integrals*, J. Math. Anal. Appl. 267(2002), 454–459.
- [7] B. G. PACHPATTE, *On Grüss type integral inequalities*, J. Inequal. Pure and Appl. Math. 3(1)(2002), Art. 11.
- [8] B. G. PACHPATTE, *New weighhthed multivariate Grüss type inequalities*, J. Inequal. Pure and Appl. Math. 4(5) (2003), Art. 108.
- [9] B. G. PACHPATTE, *On Trapezoid and Grüss like integral inequalities*, Tamkang J. Math. 34(2003), 365–369.
- [10] W. RUDIN, *Principles of Mathematical Analysis*, McGraw-Hill Book Company, Inc. 1953.