Pre-Grüss and Grüss-Ostrowski like inequalities in Banach spaces.

Summary: For a given Banach space and its dual space we investigate a Chebyshev type functional. We derive a pre-Grüss inequality for the functional. We discuss various variants of assumptions leading to this inequality. To do so, we employ some superquadratic as well as convex control functions in order to weaken the classical Dragomir’s condition. Next, we establish a corresponding Grüss-Ostrowski like inequalities for the space $L^p_{[0, b]}$

MSC:
46B99 Normed linear spaces and Banach spaces; Banach lattices
26D10 Inequalities involving derivatives and differential and integral operators
26D15 Inequalities for sums, series and integrals

Keywords:
Banach space; dual space; pre-Grüss type inequality; superquadratic function; Grüss-Ostrowski type inequality; $L^p$-space

References:

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