KANTOROVICH TYPE INEQUALITIES FOR ORDERED LINEAR SPACES

MAREK NIEZGODA†

Abstract. In this paper Kantorovich type inequalities are derived for linear spaces endowed with bilinear operations $\circ_1$ and $\circ_2$. Sufficient conditions are found for vector-valued maps $\Phi$ and $\Psi$ and vectors $x$ and $y$ under which the inequality

$$\Phi(x) \circ_2 \Phi(y) \leq \frac{C + c}{2\sqrt{Cc}} \Psi(x \circ_1 y)$$


Key words. Kantorovich type inequality, Linear space, Bilinear operation, Preorder, $C^*$-algebra, Unital positive map, Matrix.

AMS subject classifications. 06F20, 15A45, 15A42, 15A48.