

An estimate for the best constant in the L^p -Wirtinger inequality with weights

Raffaella Giova

(Communicated by Carlo Sbordone)

2000 Mathematics Subject Classification. 26D15.

Keywords and phrases. Wirtinger weighted inequality, best constant.

Abstract. We prove an estimate for the best constant C in the following Wirtinger type inequality

$$\int_0^{2\pi} a|w|^p \leq C \int_0^{2\pi} b|w'|^p.$$

1. Introduction

In this paper we consider some Wirtinger-type inequalities. More precisely, our aim is to give an estimate for the best constant $C(a, b)$ in the following type inequality (for $p > 1$):

$$(1.1) \quad \int_0^{2\pi} a|w|^p \leq C(a, b) \int_0^{2\pi} b|w'|^p$$