

An Iterative Method for Inverse Eigenvalue Problems  
and Some Ostrowski-Like Inequalities

by

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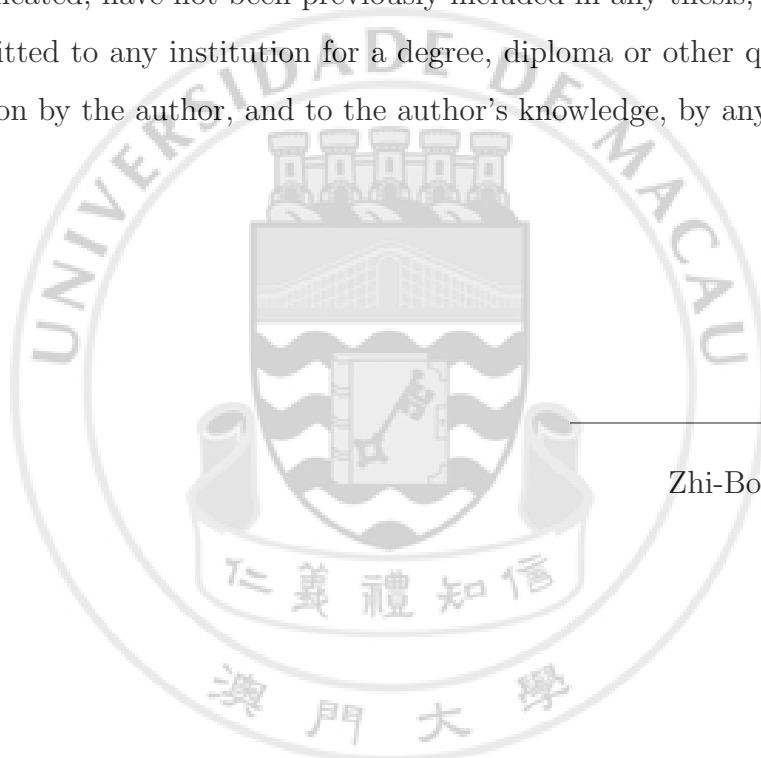
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## DECLARATION

The author declares that this thesis represents his own work with Professor Seak-Weng VONG, the author's supervisor. All the work is done under the supervision of Prof. Vong during the period 2011–2013 for the degree of Master of Science in Mathematics at the University of Macau. The results in this thesis, unless otherwise stated or indicated, have not been previously included in any thesis, dissertation or report submitted to any institution for a degree, diploma or other qualification, or for publication by the author, and to the author's knowledge, by anyone else.



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**Abstract**

In this thesis, we consider two interesting problems on computational mathematics, named inverse eigenvalue problems and Ostrowski-like type integral inequalities. We first give an introduction in Chapter 1. In Chapter 2, we propose a Gauss-Newton-like method for finding least squares solutions to inverse eigenvalue problems. We show that the proposed method converges under some mild conditions. In particular, if the method converges to the exact solution, the convergence rate is at least quadratic in the root sense. Numerical examples are given to justify the theoretical result. In Chapter 3, we consider some Ostrowski-like type integral inequalities proposed by Huy and Ngô. We give some improvements of these inequalities which are inspired by a result established recently. An example is also given to verify our improvements. This thesis ends with a chapter of a brief conclusion.

To

My Parents



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