

國立高雄大學應用數學系

106 學年度第 2 學期碩士學位考試口試時間表

Perron-Frobenius theorem and computation on multidimensional arrays

學生姓名：林冠宇 (M1054109)

口試時間：107 年 6 月 29 日(五) 14 : 30

口試地點：國立高雄大學理學院 408 室

摘 要：

The Perron - Frobenius theorem shows some important results on nonnegative irreducible matrices. This theorem has various applications and extensions. In this paper, we focus on the nonnegative irreducible matrices. After constructing a linear homotopy, we analyze the solution curve of the linear homotopy and prove that any nonnegative irreducible matrix has the positive eigenpair. This is the main result of the Perron-Frobenius theorem. The skill of the proof can be extended to prove the Perron-Frobenius theorem on tensors. Furthermore, the numerical results computed by the homotopy continuation method on nonnegative irreducible matrices and tensors are presented.