

國家理論科學研究中心數學組(臺北辦公室)
NCTS/TPE Seminar on Applied Mathematics

演講者：

Prof. Zhong-Ci SHI

Institute of Computational Mathematics

Chinese Academy of Sciences

講題：

Studies On Wilson Nonconforming Finite Element

摘要：

Wilson nonconforming finite element (1973) is a very useful rectangular element In practice. it has been shown in many engineering applications that the convergence behavior of this element is better than that of the commonly used bilinear element. However, mathematical studies carried out so far cannot justify it. The results obtained by use of standard finite element analysis technique are not satisfied. Recently (2007--) we tackle this problem from a different view point, i.e. from Mechanics, where the Wilson element was originated. We have succeeded in proving both mathematically and numerically that the Wilson element is free of shear locking for a wide class of bending dominated plane elasticity problems, while the bilinear element suffers from the shear locking. Therefore, we elucidate a long-standing folklore: why Wilson element does a better job in many practical applications than the bilinear element.

時間：

2011 年 04 月 29 日 (星期五) 14:20 - 15:10

地點：臺灣大學天文數學館 440 室

主持人：陳宜良教授 (臺灣大學數學系)