國立中山大學應用數學系
學術演講

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講　題：Studies On Wilson Nonconforming Finite Element

時　間：2016/12/08（星期四）15:30 ~ 16:10

地　點：理學院四樓理 SC 4009-1 室

茶　會：16:10 於理 SC 4010 室 (系辦公室)

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. I have spent many years on this problem. The results obtained by use of standard finite element analysis are not satisfied.

Recently we tackle this problem from a different view point, i.e. from Mechanics, where the Wilson element was originated. We have succeeded in proving mathematically 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 shear locking.

Therefore, we elucidate a long-standing folklore: why Wilson element does a better job in many practical applications than the bilinear one.

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