

國立交通大學應用數學系

學術演講公告

(1) 主講人：蕭欽玉 教授(中央研究院數學所)

講 題：Szego Kernel Asymptotics in Complex and CR Geometry

時 間：106 年 10 月 3 日(星期二) 下午 1:30 –2:20

Abstract. The Szego kernel is a classical subject in several complex variables, CR geometry and complex geometry. The study of the singularities of the Szego kernel is closely related to topics like Tian-Yau-Zelditch asymptotics, Donaldson's program, CR embedding problems, CR positive mass theorem, Sasaki geometry and Geometric quantization theory. In this talk, I will survey our results about the asymptotics of the singularities of the Szego kernel and its applications in CR and Complex geometry.

(2) 主講人：Professor Dongwoo Sheen

(Department of Mathematics, Seoul National University)

講 題：A cheapest stable nonconforming finite element methods for the Stokes/Navier-Stokes equations

時 間：106 年 10 月 3 日(星期二) 下午 2:30 – 3:20

Abstract. We give a brief review on nonconforming finite elements based on quadrilateral meshes. Then we introduce and analyze a “stable cheapest nonconforming finite element” pair on rectangular grids, with modification on the corner elements adopting the nonconforming finite element method introduced by Cai–Douglas–Ye. Except at these two corner elements, for all other elements we use the simplest P1 nonconforming quadrilateral element for the approximation of each component of velocity fields plus a globally one-dimensional bubble space, while the pressure is approximated by the piecewise constant element. We then apply this stable cheapest nonconforming pairs to approximate the steady-state Navier–Stokes equations in a rectangular cavity. Some numerical and mathematical comparisons ensure the simplicity and superiority in capturing the correct physical properties of cavity flow over other finite element methods. The numerical evidence with this element show simpler and cheaper elements can catch more precise physical characteristics.

This talk is mainly based on the paper, jointly written by Roktaek Lim.

地 點：(光復校區) 科學一館 223 室

茶 會：當天下午 3:20 (科學一館 205 室)

敬請公告 歡迎參加

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