國立中山大學應用數學系
學術演講

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講　題：On the semigroup property for some structured iterations

時　間：2018/05/31（星期四）15:30 ~ 16:30

地　點：理學院四樓理 SC 4009-1 室

茶　會：15:00 於理 SC 4010 室 (系辦公室)

摘 要

Matrix equations are encountered in many applications of applied mathematics and engineering problems. Problems in determining the solutions of a matrix equation are closely related to a wide range of challenging scientic areas. Traditional approaches for finding numerical solution are based on fixed point iterations and the speed of the convergence is usually linear.

Recently, the authors [1, 2, 3] built up a semigroup property for some binary matrix operations; to construct such a type of iterations for solving several different matrix equations, while the speed of convergence can be R-superlinearly with any order r is given. In this work, we want to generalize this property to analyze a special instance of some structured iterations arising from a class of matrix equations. We show that this property can not only find out the solution, but also construct an iterative approach which converges to the solution with any desired order. Some examples are shown to demonstrate the robustness of our method. (A joint work with Prof. Matthew M. Lin)

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