

國立中山大學應用數學系

學術演講

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講 題：An iterative method for solving the stable subspace of a matrix pencil and its application

時 間：2017/05/11（星期四）14:10 ~ 15:00

地 點：理學院四樓理 SC 4011 室

茶 會：15:00 於理 SC 4010 室（系辦公室）

Abstract

This work is to propose an iterative method of choice to compute a stable subspace of a regular matrix pencil. This approach is to define a sequence of matrix pencils via particular left null spaces. We show that this iteration preserves a semigroup property depending only on the initial matrix pencil. Via this recursion relationship, we propose an accelerated iterative method to compute the stable subspace and use it to provide a theoretical result to solve the principal square root of a given matrix, both nonsingular and singular. We show that this method can not only find out the matrix square root, but also construct an iterative approach which converges to the square root with any desired order. This is a joint work with Matthew M. Lin (NCKU).

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