

# 國立中山大學應用數學系

## 學術演講

講者：吳文淵 教授 (重慶中國科學院)

講題：Computing Real Witness Points of Positive Dimensional Polynomial Systems

時間：2019/04/18 (Thursday) 15:10 ~ 16:00 pm

地點：理學院四樓理 SC 4009-1 室

茶會：14:30 於理 SC 4010 室 (系辦公室)

### Abstract

We consider a critical point method for finding certain solution (witness) points on real solution components of real polynomial systems of equations. The method finds points that are critical points of the distance from a plane to the component with the requirement that certain regularity conditions are satisfied. In this paper we analyze the numerical stability and complexity of the method. We aim to find at least one well conditioned witness point on each connected components by using perturbation, path tracking and projection techniques. An optimal-direction strategy and an adaptive step size control strategy for path following on high dimensional components are given.

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