



ADAPTIVE COMMON ROOT ESTIMATION AND THE COMMON ZEROS PROBLEM IN BLIND CHANNEL IDENTIFICATION (TueAmPO2)

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★ Abstract :

Many multichannel algorithms for blind channel identification and deconvolution rely on the identifiability condition that the channels are coprime, i.e. they do not have common zeros. This property has not received much attention in the literature, partly due to the difficulty of factoring the high order channel polynomials that arise in room acoustics. In this paper we propose a novel method for adaptive identification of the common roots of two polynomials. The algorithm is further used to gain some insight into the problem of common zeros in the context of adaptive blind channel identification. Simulation results are provided to demonstrate the identification and the detection of common zeros. We also consider approximately common zeros and show that they do not have to be exactly identical in order to degrade the adaptive channel identification performance.