



MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

SCHOOL OF ENGINEERING & ADVANCED TECHNOLOGY – SEMINAR

Electronics, Information & Communication Systems

IEEE New Zealand Signal Processing / Information Theory Chapter

DATE: Monday, 10 April 2017, 4 – 5 pm

VENUE: AH2.83

Video link to Albany Village AV2.14

Title: **Estimating power spectral density for acoustic signal enhancement - an effective approach for practical applications**

Speaker: Yusuke Hioka

Abstract:

The acoustic signal enhancement has been still a challenging problem especially when a method has to be effective and feasible in practical applications although various approaches have been studied for many decades. Applying a post-filter such as the Wiener filter, which manipulates the spectral amplitude of a signal, is known to be an effective approach for the practical applications. However the power spectral densities (PSD) of sound sources need to be estimated beforehand for deriving the post-filter. In this talk a method for estimating the PSD of sound sources located in spatially different positions is introduced. The method estimates the PSD of each sound source from the observation of multiple beam-formers (or more simply multiple directional microphones). After introducing the principle of the method several practical applications that utilise the proposed PSD estimation method will be presented with some experimental results demonstrating the potential of the proposed method for solving challenging practical problems. The talk will also refer to a few cases where the proposed method was applied to other acoustic applications such as blind estimation of the direct-to-reverberation ratio.