

講演会（信号処理）のお知らせ

以下のとおり、Darmstadt 工科大学の Abdelhak Zoubir 先生の講演会を開催します。医療、画像、通信など信号処理諸分野で幅広く活躍されていらっしゃる先生です。ICASSP など大きな国際学会で tutorial をされる、大変分かりやすく講演されることでも知られております。大学院学生にも勉強になる内容ですので、お勧めいたします。興味がある方の参加をお待ちいたします。

日時： 3月7日（月） 午後1時30分～

場所： VBL 3F ベンチャーホール

分野： 通信信号処理、レーダー、生体信号処理、音声・映像信号処理、機械学習

Title:

The bootstrap Paradigm in Signal Processing: Estimation, Detection and Model Selection

Abstract:

The use of more accurate models in signal processing applications such as communications, radar, sonar, biomedical engineering, speech and image processing and machine learning has become a fundamental requirement. With an improved accuracy the models have become more complex and inferential statistical signal processing required in parameter estimation and signal detection and classification, for example, has become intractable. The signal processing practitioner requires a simple but accurate method for assessing errors of estimates and answering inferential questions. Asymptotic approximations are useful only when enough data is available, which is not always possible due to time constraints, the nature of the signal or the measurement setting. In place of the formulae and tables of parametric and non-parametric procedures based on complicated mathematics and asymptotic approximations, tools such as the bootstrap are powerful for solving complex engineering problems. It is the method of an engineer's choice for solving inferential signal processing problems, such as signal detection, confidence limits estimation and model selection, to mention a few. In this talk, we first give a brief overview of and the basic principle underlying the bootstrap methodology. We then discuss bootstrap techniques for dependent data.

Bootstrap methods for signal detection and model selection are presented along with frequency domain bootstrap methods for spectral analysis.



講演者紹介

Abdelhak M. Zoubir is a Fellow of the IEEE for contributions to statistical signal processing. He received the Dipl.-Ing degree (BSc/BEng) from Fachhochschule Niederrhein, Germany, in 1983, the Dipl.-Ing. (MSc/MEng) and the Dr.-Ing. (PhD) degree from Ruhr-Universität Bochum, Germany, in 1987 and 1992, respectively, all in Electrical Engineering. Early placement in industry (Klöckner-Moeller & Siempelkamp AG) was then followed by Associate Lectureship in the Division for Signal Theory at Ruhr-Universität Bochum, Germany. In June 1992, he joined Queensland University of Technology where he was Lecturer, Senior Lecturer and then Associate Professor in the School of Electrical and Electronic Systems Engineering. In March 1999, he took up the position of Professor of Telecommunications at Curtin University of Technology, where he was Head of the School of Electrical & Computer Engineering from November 2001 until February 2003. In February 2003 he took up the position of Professor in Signal Processing at Technische Universität Darmstadt.