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شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

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بالرسالة صفحات

لم ترد بالأصل



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B 17412

**INTERFERENCE CANCELLATION EMPLOYING
BSS TECHNIQUES IN MOBILE COMMUNICATION
SYSTEMS**

by

Zeinab Youssef Zohny

**A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
ELECTRONICS and COMMUNICATIONS**

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**FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Abstract

Blind source separation (BSS) aims to recover a set of unobservable independent signals from the observation of a set of sensor outputs which contains mixtures of the sources. BSS has been solved through different approaches and has a large number of applications such as: Radar and sonar, medicine, image and speech processing and has also been of great use in communication systems for equalization and timing recovery. This thesis presents the BSS problem, a survey of various techniques and a comparative study among them in order to find a suitable algorithm for wireless multiple access system. Our research focuses on the application of BSS as a new technique for interference cancellation and joint detection in the up-link of mobile CDMA systems for the situation when multi-users are communicating with a single receiver at the base station in the presence of additive white Gaussian noise and flat fading conditions. All theoretical results are verified with numerous computer simulations. Simulation results show that the proposed algorithm dominates the conventional receiver and gives comparable performance with the single user detector which can be considered as a lower bound for the bit error rate (BER).

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