

Title (en)

METHOD AND SYSTEM FOR MULTI-USER CHANNEL ESTIMATION IN DS-CDMA SYSTEMS

Title (de)

VERFAHREN UND SYSTEM ZUR MEHRNUTZER-KANALABSCHÄTZUNG IN DS-CDMA SYSTEMEN

Title (fr)

PROCEDE ET SYSTEME D'ESTIMATION POUR CANAL MULTI-UTILISATEUR DANS DES SYSTEMES DS-CDMA

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2005099130A1] The method and system for multi-user channel estimation in a multi-access network comprises: providing a communication signal (ri) providing an estimated communication signal Formula (I) generated using a spreading code signal (Ci), an information sequence signal (Bi) and a predicted composite channel impulse response signal Formula (II); comparing the communication signal (ri) to the estimated communication signal Formula (I) to provide an error signal (ei); and generating an estimated composite channel impulse response signal Formula (III) using the error signal (ei), the spreading code signal (Ci) and the information sequence signal (Bi); the predicted composite channel impulse response signal Formula (II) providing the multi-user channel estimation. The proposed method, which is based on a LMS like algorithm, is an efficient and low complexity method allowing estimating and tracking even fast times varying multi-path channels. Instantaneously, the composite channel impulse response is computed and estimates of all possible path energies are computed to be used as an indicator of the significant paths (delays).

IPC 8 full level

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Citation (search report)

- [I] WO 0184733 A1 20011108 - SIEMENS AG [DE], et al
- [A] EP 1359684 A1 20031105 - MOTOROLA ENERGY SYSTEMS INC [US]
- [I] LINDBOM L ET AL: "Automatic tuning of the step size in WLMS algorithms: applications to EDGE", VTC 2002-FALL. 2002 IEEE 56TH. VEHICULAR TECHNOLOGY CONFERENCE PROCEEDINGS, vol. 4, 24 September 2002 (2002-09-24), IEEE, NEW YORK, NY, pages 2229 - 2233, XP010608829, ISBN: 978-0-7803-7467-6
- [XI] TENG JOON LIM ET AL: "Adaptive IIR filtering for asynchronous multiuser CDMA detection", SIGNALS, SYSTEMS, AND COMPUTERS, 1999. CONFERENCE RECORD OF THE THIRTY 19991024; 19991024 - 19991027 PISCATAWAY, NJ, USA, IEEE, US, vol. 2, 24 October 1999 (1999-10-24), pages 935 - 939, XP010373774, ISBN: 978-0-7803-5700-6
- [I] LARS LINDBOM ET AL: "Tracking of Time-Varying Mobile Radio Channels-Part II: A Case Study", IEEE TRANSACTIONS ON COMMUNICATIONS, vol. 50, no. 1, 1 January 2002 (2002-01-01), , IEEE SERVICE CENTER, PISCATAWAY, NJ, US, XP011010102, ISSN: 0090-6778
- See references of WO 2005099130A1

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