

Power-Of-Two Quantization In Decision Feedback Equalization

Aldajani, MA

**IEEE, 2006 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND
SIGNAL**

**PROCESSING, VOL IV, PROCESSING - SIGNAL PROCESSING FOR
COMMUNICATION,**

SENSOR ARRAY AND MULTICHANNEL SIGNAL PROCESSING; pp: 473-473; Vol: ##

King Fahd University of Petroleum & Minerals

<http://www.kfupm.edu.sa>

Summary

In this work, we propose an efficient structure for decision feedback equalization (DFE). The proposed structure makes use of the power-of-two quantization concept to completely eliminate the real multiplications in the DFE's update equations. The resulting structure is shown to substantially reduce the complexity of the DFE without any loss of performance. The study includes performance analysis of the proposed method and closed form expressions for the mean square errors.

References:

1. ALDAJANI MA, 2001, IEEE T CIRCUITS-II, V48, P233
2. ALDAJANI MA, 2001, P ICASSP SALT LAKE CI, V4, P2621
3. DUTTWEILER DL, 1982, IEEE T ACOUST SPEECH, V30, P578
4. EWEDA E, 1992, IEEE T CIRCUITS-II, V39, P113
5. EWEDA E, 1995, IEEE T CIRCUITS SYST, V42, P498
6. SAYED AH, 2003, FUNDAMENTALS ADAPTIV
7. TREICHLER C, 2001, THEORY DESIGN ADAPTI
8. XUE P, 1986, IEEE T ACOUST SPEECH, V34, P1603

For pre-prints please write to: abstracts@kfupm.edu.sa