

On Quantization And Its Impact On The Exact Recovery Of High Ordermoments

Cheded, L.;Dept. of Syst. Eng., King Fahd Univ. of Pet.Miner., Dhahran;
**Acoustics, Speech, and Signal Processing, 1995. ICASSP-95., 1995 International
conference;Publication Date: 9-12 May 1995;Vol: 3,On page(s): 1816-1819
vol.3;ISBN: 0-7803-2431-5**

King Fahd University of Petroleum & Minerals

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

Summary

This paper addresses the problem of the exact recovery of unquantized moments from their quantized counterparts. A brief review of amplitude quantization and its impact on the exact moment recovery (EMR) problem is given. In particular, a special class of order p , called L_p , for which EMR is always achieved regardless of the quantization fineness used, is introduced together with some new results on its properties. Due to the tremendous practical gains that can accrue from the use of 1-bit quantized members of L_1 , it is shown how to force any signal to become a member of this class, hence naturally re-discovering the dithered quantization process. Two approaches to the EMR problem and some simulation results which are in very good agreement with the theory, are presented

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