ITU - Telecommunication Standardization Sector

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SOURCE[1]: VOCAL Technologies Ltd. (http://www.vocal.com)

TITLE: G.gen.bis: G.dmt.bis: G.lite.bis: Are LDPC codes appropriated for ADSL modems?

ABSTRACT

This contribution discuss the use of LDPC codes for ADSL modems.

1.   Introduction

This contribution discuss the use of LDPC codes for ADSL modems.

2.   LDPC codes for ADSL modems

The core of LDPC codes is the generation of the Parity Check Matrix. So far it is not known the way to automatically generate any dimension LDPC parity check Matrix with a good performance. The only Parity Check Matrices with good performance used so far are manually created, or are of a very big dimension (millions of bits). This technique is not appropriate for the case of ADSL modems, because of the big complexity burden needed in the transmitter, and for the amount of delay needed to generate a good LDPC Parity Check Matrix.

It is also very important to take into account how LDPC codes will work for low data rate where the Parity Check Matrix creates a large latency.

The only impressive performance of LDPC codes known so far are with large Parity Check Matrices (in the order of millions) and for fix LDPC Parity Check Matrices. created manually in part.

Another withdrawn of LDPC codes for ADSL modems is that the complexity introduced in the transmitter, this means more power consumption and less integration for the CO side. and in a number of scenarios Advance Coding will not be needed.

Another point is the Equalizer for local loops environments and LDPC codes is not clear how will work.

3.   Summary

The present paper relates to the use of LDPC codes for ADSL modes.

This paper is for information only and is intended to generate discussion on the use of LDPC codes for ADSL modems.

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