Abstract

To achieve high throughput in wireless networks a partial parallel LDPC decoder is proposed in this paper. For fully-parallel decoders, it suffers from large hardware complexity caused by a large set of processing units and complex interconnections. In wireless networks coding complexity and routing congestion can be reduced by designing the decoder with partially-parallel architecture. The partially-parallel architecture with Split Row algorithm reduces the total global wire length by about 26% without any hardware overhead and increasing the throughput by 60% and 71% in wireless networks.
- R. El Alami, C. B. Gueye, M. Boussetta, M. Mrabti and M. Zouak, ”Reduced complexity of decoding algorithm for Irregular LDPC Codes using Split Row Method,” accepted in Proc. Int. Conf. on Multimedia Computing and Systems, Ouarzazate, Morocco, Apr 2010

**Index Terms**

Computer Science  
Circuits And Systems
Keywords
LDPC-Low Density Parity Check Decoder  VN-Variable Node  PU-Processing Unit
WNs-Wireless Networks
CHNU-Check Node Unit
CNU-Control Node Unit
MU-Memory Unit
AGU-Automatic Gain Unit
SNR-Signal to Noise Ratio
SP-Split
Col-Column
Mem-Memory
BER-Bit Error Rate