1074-94-263 **Vishwambhar Rathi**, **Mattias Andersson**, **Ragnar Thobaben** and **Joerg Kliewer*** (jkliewer@nmsu.edu), Klipsch School of Electrical & Computer Engin, New Mexico State University, P.O. Box 30001, MSC 3-O, Las Cruces, NM 88003, and **Mikael Skoglund**. *Analysis and Design of Two Edge Type LDPC Codes for the BEC Wiretap Channel.*

We consider transmission over a wiretap channel where both the main channel and the wiretapper's channel are Binary Erasure Channels (BEC). There are two performance criteria for a coding scheme used over a wiretap channel: reliability and secrecy. The reliability measure corresponds to the probability of decoding error for the intended receiver. This can be easily measured using density evolution recursions. However, it is more challenging to characterize secrecy, corresponding to the equivocation of the message for the wiretapper. Measson, Montanari, and Urbanke have shown how the equivocation can be measured for a broad range of standard LDPC ensembles for transmission over the BEC under the point-to-point setup. By generalizing this method to two edge type LDPC ensembles, we show how the equivocation for the wiretapper can be computed. We find that relatively simple constructions give very good secrecy performance and are close to the secrecy capacity. (Received August 22, 2011)