

## **Robust stopping criterion in signal-to-noise ratio uncertainty environment**

### **ABSTRACT**

A robust stopping criterion (called online-BER [OB]) that can terminate iterative turbo decoding in a signal-to-noise ratio (SNR) uncertainty environment is proposed. OB is based on the online bit error rate (BER) estimation and the BER thresholds. Both values are used to detect convergence and non-convergence decoder output and also to halt iterative decoding in various SNRs. Unlike other well-known stopping criteria, OB does not depend on SNR information in its stopping rules and hence it is less complex. OB is also more robust than other stopping criteria in a SNR uncertainty environment while being capable of reducing the average iteration number and resulting in less degradation in BER performance.

**Keyword:** Robust stopping criterion; BER estimation; Turbo codes; Iterative decoding