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**Steven T. Dougherty** and **T. Aaron Gulliver\*** (agullive@ece.uvic.ca), Dept. of Electrical and Computer Engineering, P.O. Box 3055, STN CSC, Victoria, BC V8W 3P6, Canada, and **Young Ho Park** and **John N.C. Wong**. *Optimal Linear Codes over  $Z_m$* .

We examine the main linear coding theory problem and study the structure of optimal linear codes over the ring  $Z_m$ . Bounds are derived on the maximum Hamming weight of these codes. We give bounds on the best linear codes over  $Z_4$ ,  $Z_8$  and  $Z_9$  of length up to 6. We determine the minimum distances of optimal linear codes for small lengths. Examples of optimal codes are given. (Received August 29, 2006)