

Meeting: 1001, Evanston, Illinois, SS 5A, Special Session on Codes and Applications

1001-94-414 **Ralf Koetter*** (koetter@uiuc.edu), 1308 W. Main St., Urbana, IL 61801, **Wen-Ching W Li**, Department of Mathematics, Pennsylvania State University, University Park, PA 16802, **Pascal O. Vontobel**, University of Wisconsin, Madison 3356 Engineering Hall, 1415 Engineering Drive, Madison, WI 53706, and **Judy L. Walker**, University of Nebraska, Department of Mathematics, Lincoln, NE 68588. *Pseudocodewords, cycle codes, and the edge zeta function of graphs*. Preliminary report.

The performance of iterative decoding techniques for codes on graphs can be understood in the framework of pseudocodewords on the underlying graphs. We give a brief overview of the involved concepts before we focus on the case of cycle codes. It turns out that for these codes the notion of pseudocodewords is tightly connected to graph theoretic concepts involving a type of zeta function pioneered by Hashimoto and Bass. (Received August 31, 2004)