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Deanna T. Dreher* (s-dturk1@math.unl.edu), 203 Avery Hall, Lincoln, NE 68588.

Pseudocodewords of LDPC codes from voltage graphs. Preliminary report.

The pseudocodewords of LDPC codes have been characterized by Koetter, Li, Vontobel and Walker using work done by Stark and Terras on zeta functions of graphs. Recently Kelley and Walker have shown how some well known LDPC codes can be constructed using voltage graphs. We use further results by Stark and Terras concerning zeta functions of covers to study pseudocodewords arising from voltage graph constructions. (Received February 11, 2008)