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**Finley J. Freibert\*** (fjfrei01@louisville.edu), 328 Natural Science Building, University of Louisville, Louisville, KY 40292, and **Jon-Lark Kim**, 328 Natural Science Building, University of Louisville, Louisville, KY 40292. *Optimal Distance Profiles of Binary Self-Dual Type II Codes.*

Self-dual codes have widespread relations to various areas such as combinatorial designs, unimodular lattices, and group theory. A self-dual code is called *doubly-even* or *Type II* if the weights of the codewords are divisible by 4. Let  $C$  be a binary  $[n, k]$  code and let  $C_0 = C$ . A sequence of linear subcodes of  $C$ ,  $C_0 \supset C_1 \supset \cdots \supset C_{k-1}$  is called a *subcode chain*, where the dimension of  $C_i$  is  $k - i$  for  $i = 0, \dots, k - 1$ . Let  $d_i := d(C_i)$  be the minimum distance of  $C_i$ . Then the sequence  $d_0 \leq d_1 \leq \cdots \leq d_{k-1}$  is called a *distance profile* of  $C$ . Luo, Vinck, and Chen (2010) have studied the optimal distance profiles of Reed-Solomon codes, Golay codes, the first order Reed-Muller codes, and the second order Reed-Muller codes. In this talk, we examine optimal distance profiles of all Type II codes of length 24, the extremal Type II codes of length 32, and some doubly-even self-orthogonal codes. (Received August 15, 2011)