1020-94-163   **Jon-Lark Kim*** (`jl.kim@louisville.edu`), Department of Mathematics, University of Louisville, 328 Natural Sciences Building, Louisville, KY , and **Vera Pless** (`pless@math.uic.edu`), Dept. of Mathematics, Stat. and Comp. Sci., University of Illinois at Chicago, 851 S. Morgan Street, Chicago, IL 60607. *Optimal Subcodes of Self-Dual Codes.* Preliminary report.

Self-dual codes have been one of main topics in algebraic coding theory since the second author started to classify binary self-dual codes in 1972. Often many extremal self-dual codes turn out to be best among the linear codes of the same parameters.

In this talk we attempt to construct optimal (self-orthogonal) linear codes or codes with the best known parameters from binary self-dual codes. Given a self-dual code, we first describe a method to construct subcodes with higher minimum weight. In particular, we construct a $[48, 14, 16]$ code and an optimal $[48, 9, 20]$ code from the extended quadratic residue code of length 48. Both codes are not equivalent to the best known codes of the same parameters in the Magma data base. Similarly we construct $[72, 29, 16]$, $[72, 23, 20]$ codes which are not equivalent to the best known codes. Further we construct a self-orthogonal $[72, 35, 16]$ code with $A_{16} = 129972$ while the best known $[72, 35, 16]$ code has $A_{16} = 136116$, justifying the inequivalence. We also give some experimental results on the subcodes from doubly-even self-dual codes. We hope that our approach can tell more information on a putative extremal self-dual $[72, 36, 16]$ code. (Received August 27, 2006)