**Energy Band Calculations for Maximally Even Superlattices**
RICHARD KRANTZ, JASON BYRD, Metropolitan State College of Denver — Superlattices are multiple-well, semiconductor heterostructures that can be described by one-dimensional potential wells separated by potential barriers. We refer to a distribution of wells and barriers based on the theory of maximally even sets as a maximally even superlattice. The prototypical example of a maximally even set is the distribution of white and black keys on a piano keyboard. Black keys may represent wells and the white keys represent barriers. As the number of wells and barriers increase, efficient and stable methods of calculation are necessary to study these structures. We have implemented a finite-element method using the discrete variable representation (FE-DVR) to calculate E versus k for these superlattices. Use of the FE-DVR method greatly reduces the amount of calculation necessary for the eigenvalue problem.

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