

1056-05-1075

**Eunjeong Yi\*** (yie@tamug.edu), Texas A&M University at Galveston, P.O. Box 1675, Galveston, TX 77553. *Coding Sequences and Their Applications*. Preliminary report.

For any graph  $G$  with vertices given by positive integers  $1, 2, \dots, n$ , a *pseudo-coding sequence* of  $G$  is an ordered listing of the vertices where each edge is represented by exactly one pair of consecutively-listed vertices and where a lifting of the pen is denoted by the number 0. If a pseudo-coding sequence contains the minimum number of zeros, it is called a *coding sequence* of  $G$ . Coding sequences can be a useful device for the storage and the communication of graphs. In this talk, we discuss new invariants of graphs arising out of coding sequences. For applications, first we give a new proof of Euler's formula for connected planar graphs; then we give either formulas or algorithms of coding sequences for complete graphs. We also plan to discuss the applications of coding sequences to Paley graphs. (Received September 20, 2009)