

# Graph labeling, Complexity and Variants

*Geir Agnarsson*, George Mason University, Fairfax VA – 22030

## Abstract

For a graph  $G$ , a *graph labeling* is an assignment of natural numbers to the vertices  $V(G)$  (or edges  $E(G)$ , or both) such that certain conditions hold. This is a classic and well studied problem in graph theory and computer science. – In this talk we discuss some specific graph labelings and investigate the complexity of transforming one labeling into another subject to certain conditions. A specific case of this can be used to give an alternative proof of a well-known fact about symmetric and alternating groups.

**Keywords:** graph labeling, complexity.