1070-03-104 **Rachel Epstein*** (repstein@math.harvard.edu), FAS Department of Mathematics, Harvard University, 1 Oxford St, Cambridge, MA 02138. *Automorphisms of the c.e. sets.*

Let $\mathcal{E}$ be the lattice of computably enumerable (c.e.) sets under set inclusion. We will discuss the history of automorphisms of $\mathcal{E}$ as well as recent results and open problems.

Automorphisms of $\mathcal{E}$ can be used to solve problems regarding definability in $\mathcal{E}$. In particular, we discuss the use of automorphisms to determine which jump classes of degrees are definable. We show that there is a nonlow degree, all of whose elements are automorphic to a low set. This tells us that the nonlow degrees are not definable, despite all other upward closed jump classes being definable. It also leads to the question of characterizing which sets are automorphic to low sets. (Received February 02, 2011)