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Rumen D Dimitrov* (rd-dimitrov@wiu.edu), Department of Mathematics, Western Illinois University, Macomb, IL 61455. *An Automorphism Basis in $\mathcal{L}^*(V_\infty)$* . Preliminary report.

Metakides and Nerode introduced the modern study of the lattice $\mathcal{L}(V_\infty)$ of computably enumerable subspaces of the fully effective countable dimensional vector space V_∞ . By $\mathcal{L}^*(V_\infty)$ we denote the lattice $\mathcal{L}(V_\infty)$ modulo $=^*$ (finite dimension). The complemented elements of $\mathcal{L}(V_\infty)$ are called decidable spaces. In 1977 Metakides, Nerode, and Shore showed that the space V_∞ has also maximal subspaces. The equivalence classes of the maximal spaces modulo $=^*$ are co-atoms in $\mathcal{L}^*(V_\infty)$. The automorphisms of the lattice $\mathcal{L}^*(V_\infty)$ are not well understood. For example, the question about the number of automorphisms of $\mathcal{L}^*(V_\infty)$ has been open for more than 30 years. Ash and Downey proved that every automorphism of $\mathcal{L}(V_\infty)$ is completely determined by its action on the decidable spaces. In this talk we will prove that the automorphisms of $\mathcal{L}^*(V_\infty)$ are completely determined by their action on the co-atoms of $\mathcal{L}^*(V_\infty)$. (Received September 16, 2014)