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Tyler John Markkanen* (tmarkkanen@springfieldcollege.edu), Department of Math, Physics, and Comp. Sci., Springfield College, 263 Alden Street, Springfield, MA 01109. *Restricting the Turing degree spectra of structures*. Preliminary report.

The degree spectrum of a structure \mathfrak{A} , denoted $\text{DgSp}(\mathfrak{A})$, is the set of Turing degrees of all structures isomorphic to \mathfrak{A} , that is, $\text{DgSp}(\mathfrak{A}) = \{\text{deg}_T(\mathfrak{B}) : \mathfrak{A} \cong \mathfrak{B}\}$. In computable model theory and effective algebra, degree spectra are sometimes used to classify different kinds of structures based on their computability-theoretic strength. In this talk, we will give restrictions on the degree spectra of specific classes of structures, including finite-component graphs, equivalence structures, rank-1 torsion-free abelian groups, and daisy graphs. This will lead to a separation of a fifth class, namely linear orders, from each of the other four classes. In particular, for each class \mathcal{K} of structures among the four, we will find a linear order whose degree spectrum cannot be realized by the structures in \mathcal{K} . (Received September 16, 2014)