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A Finer Look at the Intermediate Degrees.

For some classes of algebraic structures, it takes increasingly many jumps to decode information coded into a fixed isomorphism type. Feiner exploited such a relationship within the class of Boolean algebras to construct a Boolean algebra having presentations in a computably enumerable intermediate degree but not having computable presentations. In this talk, we begin by discussing this and other examples within various classes of algebraic structures.

After doing so, we introduce the Feiner Hierarchy and study the sets that are low and high for this hierarchy. In particular, we show the existence of intermediate computably enumerable degrees that are low, intermediate, and high for this hierarchy. (Received September 25, 2012)