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**Oscar Levin\*** ([oscar.levin@unco.edu](mailto:oscar.levin@unco.edu)), School of Mathematical Sciences, 501 20th Street, Campus Box 122, Greeley, CO 80639-0001. *Partitions in graphs and hypergraphs with too much freedom*. Preliminary report.

We will consider two apparently unrelated questions from computable graph theory. First, a *domatic partition* in a graph is a partition of the vertices into dominating sets (so that every vertex is in or is adjacent to a vertex in each set). We ask how small the size of *computable* domatic partition can be in a highly computable graph. Second, a weak coloring of a hypergraph is a partition of its vertices into independent sets (so that no set in the partition contains any hyperedge). We ask how large the size of a *computable* vertex coloring can be in a highly computable 3-uniform hypergraph.

The two questions are connected only by their apparent difficulty in obtaining tight answers. In this talk we will explore how sub-optimal partitions in these structures possess too much freedom, resulting in difficulties to both diagonalization and computation. (Received September 15, 2020)