

- ▶ RUSSELL MILLER, *Tree-decidable structures*.
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Traditionally, in computable structure theory, a structure with domain ω is called *computable* if its atomic diagram is decidable, and is called *decidable* if its entire elementary diagram is decidable. These designations have been restricted to countable structures, as larger structures have diagrams that do not admit Gödel coding into ω .

We will discuss joint work by Jason Block and the speaker, presenting what we consider to be the best candidates for analogous notions in the case where a structure of size continuum is presented as a set of paths through a computable subtree of $\omega^{<\omega}$. Our notions can be applied to profinite groups and to automorphism groups of countable structures. These structures are well suited to the situation, as their usual topologies are totally disconnected, just like that of the paths through $\omega^{<\omega}$. However, with a minor modification to allow an equivalence relation, our notions also apply to the fields \mathbb{R} and \mathbb{C} , which both turn out to be *tree-decidable* in our definition, and to other structures in functional signatures whose standard topology need not be totally disconnected.