Tree dimension in verification of constrained Horn clauses

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I will introduce the notion of tree dimension and how it can be used in the verification of constrained Horn clauses. The dimension of a tree is a numerical measure of its branching complexity and the concept here applies to Horn clause derivation trees. I will show how to reason about the dimensions of derivations and how to filter out derivation trees below or above some dimension bound using clause transformations.

I will then present algorithms using these constructions to decompose a constrained Horn clauses verification problem. Finally I will report on implementations and experimental results.

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