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On ordered meet trees

We will focus on first order model theory of (colored) ordered trees: elimination of quantifiers ("geometric" description of definable sets) classification of countable models (Vaught's conjecture), dp-minimality,...

A *meet tree* is a partally ordered set $(M, \trianglelefteq)$ in which predecessors of any element form a chain and every pair of elements $x, y \in M$ has infinium, denoted by $x \wedge y$; we also say that $(M, \wedge)$, which is interdefinable with $(M, \trianglelefteq)$, is a meet tree. A *colored tree* has (arbitrary) unary predicates added.

- $C(a) = \{x \in M \mid a \trianglelefteq x\}$ is a *closed cone* centered at a;
- $a \triangleleft x \wedge y$ defines an equivalence relation on $C(a) \smallsetminus \{a\}$; the classes are called *open cones* centered at a. and $C_a(x)$ denotes the class of x.

An *ordered tree* is a structure $(M, \wedge, <)$ satisfying:
(1) $(M, \wedge)$ is a meet tree,
(2) $<$ extends $\triangleleft$ and linearly orders M, and
(3) All cones are $<$-convex.