1078-03-329 **Akito Tsuboi*** (tsuboi@math.tsukuba.ac.jp), Tsukuba, Ibaraki 305-8571, Japan. *On Indiscernible Trees.*

An ordered set O is called a tree if, for any $a \in O$, its initial segment $\{b \in O : b < a\}$ is linearly ordered. The set $\omega^{<\omega}$ is a typical example of tree.

Let $M \models T$, where T is a (complete) theory in L. We are interested in sets $A \subset M$ of the form $(a_\eta)_{\eta \in O}$, where O is a tree, and a_η is an element in M. Such a set A is also called a tree.

Very roughly, a tree $A = (a_\eta)_{\eta \in O} \subset M$ is called an indiscernible tree if it has the following property: For any $X, Y \subset O$, if X and Y have a similar shape $(X \sim Y)$, then

$$\mathrm{tp}_L(a_X) = \mathrm{tp}_L(a_Y),$$

where a_X is the set $\{a_\eta : \eta \in O\}$. This definition depends on the choice of similarity $\sim$, and there are several different notions of tree indiscernibility. The following is our main concern:

(*) Let O be a tree and $\Gamma((x_\eta)_{\eta \in O})$ a set of L-formulas with free varialbes from the x_η's. Is Γ realized by an indiscernible tree?

We will see that (*) has an affirmative answer (for many different notions of tree indiscernibility), if we impose homogeneity conditions on Γ. (Received December 12, 2011)