1078-03-142 **Hyeung-joon Kim*** (joon9754@yonsei.ac.kr). *Several notions of indiscernibility for trees and their applications to classification theory.*

Suppose we are given a set of elements indexed by a tree (i.e. a partially ordered set in which any two incomparable elements do not have a common upper bound). How can we define the notion of 'order type' for tuples in such a set? And we want to define it in such a way that allows us to prove the existence of an *indiscernible tree* (i.e. a tree in which any two tuples having the same order type realize the same type). The answer to this question is not so straightforward because there are several different ways to define the notion of order type in trees, and analyzing the existence of indiscernible trees requires rather complicated tools of infinitary combinatorics. S. Shelah originally developed this idea in his book Classification Theory, but we think some of his arguments are incomplete. In this talk, we clarify Shelah's definitions of order type for trees, and present clarified/revised arguments for the existence of indiscernible trees. We also discuss applications of indiscernible trees to problems in classification theory. (Received December 03, 2011)