1106-03-148 **Ekaterina Fokina*** (efokina@logic.univie.ac.at), Kurt Gödel Research Center, University of Vienna, Währingerstr. 25, 1090 Vienna, Austria. *Equivalence relations in computable model theory.*

Equivalence relations represent the idea of resemblance between mathematical objects. Especially important among equivalence relations are equality, various kinds of isomorphisms and equimorphisms in different mathematical domains. One of the essential questions is the question of existence, up to an equivalence relation, of mathematical structures with particular properties. Applied to computable model theory, one investigates whether or not a particular structure has a computable presentation, that is, is isomorphic to a computable structure. Equimorphic (bi-embeddable for a suitable notion of embedding) structures in the context of computable model theory have also been studied.

In this talk we will discuss several approaches to study the role of equivalence relations in computable model theory. In particular, within one approach, equivalence relations are used to measure the complexity of classification of computable structures. On the other hand, degrees of atomic diagrams of structures can be used to characterize the inherent complexity of equivalence classes of structures, up to various equivalence relations. We will also discuss how equivalence relations allow one to compare the informational content of universes for effectively given structures. (Received September 14, 2014)