1027-46-70   **Volodymyr Nekrashevych*** (`nekrash@math.tamu.edu`), Department of Mathematics, Texas A&M University, College Station, TX 77843-3368. *C^*-algebras and self-similar groups.*

We will introduce a class of C^*-algebras associated with elf-similar groups (groups generated by automata). Self-similar groups appear naturally as iterated monodromy groups of self-coverings of topological spaces.

We will discuss properties of these algebras and compute K-theory of the algebras associated with iterated monodromy groups of hyperbolic rational functions, which will show that many of these algebras are isomorphic to each other.

On the other hand, we will show how one can reconstruct the Julia set of the rational function from the gauge action of the circle on the associated C^*-algebra.

We will also discuss a relation of these algebras with the Ruelle algebras studied by J. Kaminker, I. Putnam and J. Spielberg. (Received February 14, 2007)