

Groups and algebras associated to holomorphic dynamical systems

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We will talk about iterated monodromy groups and related algebras. They are associated with self-coverings of topological spaces, in particular with iterations of complex rational functions.

The iterated monodromy group is often generated by a finite automaton and the techniques of the automata theory can be used to study the iterated monodromy groups and the associated algebras. We will show how the properties of the dynamical systems are related with the properties of the corresponding algebraic structures, in particular how the Julia set of the function can be reconstructed from its iterated monodromy group and the associated graded algebra.

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