Abstract

In this thesis, we study the monodromy groups of Fuchsian Differential Equa- tions and its properties. We find circuit matrices at all singularities of a Fuchsian differential equation. These circuit matrices forms a group called monodromy group. In a Fuchsian differential equation, if there are three singularities then we can predict the properties of its monodromy group by finding the trace of circuit matrices at all singularities. Chapter 1 deals with basic deffnitions and terminologies. In Chapter 2, we provide a formula to calculate the traces of the circuit matrices at singular points which depends on analytic coefficients of our Fuchsian differential equation. We state our main theorem in Chapter 3 and discuss few examples. In Chapter 4 we prove several interesting group theoretic lemmas that are needed for the main theorem and outline the proof of our main theorem. All our proofs and examples can be found in