

2007:8

Självständigt arbete i matematik

Matematiska institutionen

Stockholms universitet

## **Juha Salomaa: Finding numerical solutions to the Schwarz-Christoffel Equation**

### **Sammanfattning**

When mapping the upper half plane onto a polygon by the Schwarz-Christoffel equation, one is faced with the problem that the points that are mapped to each corner must be found simultaneously (thus we must seek a numerical solution). In this work we will first find a system of equations, that when solved will give us these points. Further we will work with this system analytically to get rid of singularities, complex factors and other mathematical phenomena that may cause problems when implementing a program. Thus getting a system that contains only bounded real functions and can therefore be numerically estimated with great accuracy. We shall then see how we might go ahead to implement a program that will give us the set of points that are mapped to the corners of a specific polygon. And finally through examples we shall see how this program works.