

Title: Ricci flow and geometric analysis on manifolds

Author: Jakub Eliáš

Ústav: Matematický ústav UK

Supervisor: doc. RNDr. Petr Somberg Ph.D., Matematický ústav UK

Abstract: This thesis discusses basic aspects of the Ricci flow on manifolds with a view towards the ambient space construction. We start with the background review of the Riemannian geometry and parabolic partial differential equations, and the Ricci flow problem on manifolds is established. Then we aim towards the formulation of the Ricci flow problem on ambient spaces and provide several basic examples. There are two main parts: the first consists of general theory needed to formulate our problem and strategy, while the second part consists of particular calculations associated with the Ricci flow problem.

Keywords: Ricci flow, Ambient space, Ambient metric, Poincaré-Einstein metric.