



C^1 robustly minimal iterated function systems*

F.H. Ghane

Department of Mathematics, Ferdowsi University of Mashhad, Iran

f.h.ghane@yahoo.com

A.J. Homburg

Korteweg-de Vries Institute for Mathematics, University of Amsterdam, Netherlands

a.j.homburg@uva.nl

A. Sarizadeh[†]

Department of Mathematics, Ferdowsi University of Mashhad, Iran

ali.sarizadeh@gmail.com

October 28, 2009

Abstract

We construct iterated function systems on compact manifolds that are C^1 robustly minimal. On the m -dimensional torus and on two dimensional compact manifolds, examples are provided of C^1 robustly minimal iterated function systems that are generated by just two diffeomorphisms.

Keywords: iterated function systems, robust property, minimal systems.

AMS Classification: 37E30, 28A20

1 Introduction

Our motivation for this paper comes from a result contained in [3] by Gorodetskiĭ and Il'yashenko on iterated function systems on the circle. They provide an example of an iterated function system generated by two circle diffeomorphisms, that is robustly minimal in the C^1 topology. The example consists of an irrational rigid rotation and a diffeomorphism with an attracting and a repelling fixed point; we refer to [6, Proposition 12] for details of the construction.

*This research was supported by a grant from Ferdowsi University of Mashhad (NO. MP88070GAN)

[†]Corresponding author.