## The dynamics of mapping classes on surfaces Tokyo Institute of Technology – Winter 2011-2012

## Eriko Hironaka

May 9, 2013

## Table of Contents:

- 1. Introduction to mapping classes and the minimum dilatation problem
- 2. Train tracks and transition matrices, simplest hyperbolic braid
- 3. Train track automata, smallest genus 2 example
- 4. Perron-Frobenius matrices
- 5. Digraphs, and Birman's theorem
- 6. Fibered Faces of 3-manifolds
- 7. Fibered Faces and deformations of mapping classes
- 8. Teichmüller polynomials, fibered faces, and families of digraphs
- 9. Penner examples and quasi-periodicity
- 10. Coxeter mapping classes and graphs with tails
- 11. Summary