

# NIELSEN THEORY AND REIDEMEISTER TORSION

*Editor of the Volume*

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## PREFACE

A workshop titled “Dynamical zeta functions, Nielsen theory and Reidemeister torsion” was held at the Stefan Banach International Mathematical Center in Warsaw, Poland from June 24 to July 5, 1996. The workshop was organized by Zygfryd Kucharski with the assistance of a committee consisting of Robert Brown, Edward Fadell, Boju Jiang and Alexander Mishchenko. About 40 mathematicians from more than a dozen countries attended at least part of the workshop.

This was the first conference to bring together researchers specializing in the part of topological fixed point theory and related topics that is known altogether as Nielsen theory, with mathematicians concerned with Reidemeister torsion and related areas. Extending more classical zeta functions, a zeta function can be defined by using the Nielsen numbers of the iterates of a map and for special cases of manifolds, it can be shown that this zeta function is a rational function. Recent research on the asymptotic behaviour of the Nielsen numbers of iterates of a homeomorphism of a surface has demonstrated that the Nielsen zeta function can be used to obtain information about periodic points of such a homeomorphism. Thus it was decided that it was an appropriate time for a meeting that would present both the topological methods of Nielsen theory and the algebraic and analytic techniques of zeta function and Reidemeister torsion theory.

A notable feature of the workshop during its first week, prompted by the broad range of mathematics to be covered, was an emphasis on expository talks. There were lecture series by Melvin Rothenberg on new developments in torsion and by Dan Burghelca on torsion and dynamics. Several experts in Nielsen theory presented survey talks on their specialities. The talks during the second week of the workshop focussed instead on the most recent discoveries in the various fields represented.

The present volume consists of papers representing all aspects of the workshop. In particular, a number of the speakers who gave expository presentations have written up the details of their talks for this volume.

The participants at the workshop are especially grateful to Zygfryd Kucharski for obtaining the necessary financial support for the meeting and for taking care of all the local arrangements. We thank the Stefan Banach International Center for its support and for making available to us its very convenient facilities. We also appreciate the hard work and dedication of Jerzy Jezierski, who carried out the challenging task of editing these Proceedings.

*Robert F. Brown*

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