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Two dimentional orbifolds' volumes' spectrum

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Contents

Abstract

Orbifolds! Yeah!
Spectrums! Yeah!

Chapter 1

Introduction

Chapter 2

Different definitions of an orbifold

This chapter the next will be a technical chapters. Later on we will evoke some terms and definitions without explicitly saying what they mean instead we will put a reference to this chapter with explicit saying to what definition it refers.
For example in the later chapters there will be phrases like "adding a defect of order . . . " or "gluying orbifolds by boundries" and they are explained in this and the next chapter.

We will explore various definitions of an orbifold, partially proving they are equivalent, partially linking to the sources.
Some of these definitions apply only to the special cases. Some of them contain constructions with which not all orbifolds can be made (at least some of them can't be derived as such a priori) .

2.1 Hiperbolic plane tilling

2.2 Manifolds with defects

2.2.1 Disk and sphere with defects

2.2.2 Conway notation

reference

2.3 Quationts of planes

2.4 Generalised manifolds

This approuch is very simmilar to the previous one. It differs slightly where we put the difinition burden.

2.5 Complexes?

Chapter 3

Order structure

In this chapter we will discuss order type of the set of all possible Euler orbicharacteristics of two dimentional orbifolds.
For now, until Chapter 4 Counting occurrences, we will not pay attension to how many orbifolds have the same Euler orbicharacteristic.
Because of that and since Euler orbicharacteristic does not depend on the cyclic order of points on the conponents of the boundry we introduce an extension of a notation from [2].

We will write $*\{a, b, c, d, \dots\}$ to denote a type of a boundry (of an orbifold) that have kaleidoscopic points of periods $a, b, c, d, \dots$, but in any order.

From what we wrote above (that Euler orbicharacteristic does not depend on the cyclic order of points on the conponents of the boundry), we can see that Euler orbicharacteristic is well defined when we specify only such a type of the components of the boundry of an orbifold and not a particular cyclic order.

3.1

Chapter 4

Counting occurrences

abcd

Chapter 5

Decidability

5.1 Algorithm

Here we will show the proof that the problem of decideng whether a given rational number is in an Euler orbicharacteristic's spectrum or not is decidable by showing algorithm for doing this.
We start with $\frac{p}{q}$, where $p \in \mathbb{Z}$ and $q \in \mathbb{N}$.

Chapter 6

Connection with modular forms

Chapter 7

Conclusions

Chapter 8

test

abcd

Bibliography

[1] John Conway and Daniel Huson. The orbifold notation for two-dimensional groups. *Structural Chemistry*, 13, 08 2002.

[2] Chaim Goodman-Strauss John H. Conway, Heidi Burgiel. *The Symmetries of Things*. A K Peters, 1 edition, 2008.

[3] William P Thurston. *The geometry and topology of three-manifolds*. s.n, 1979.