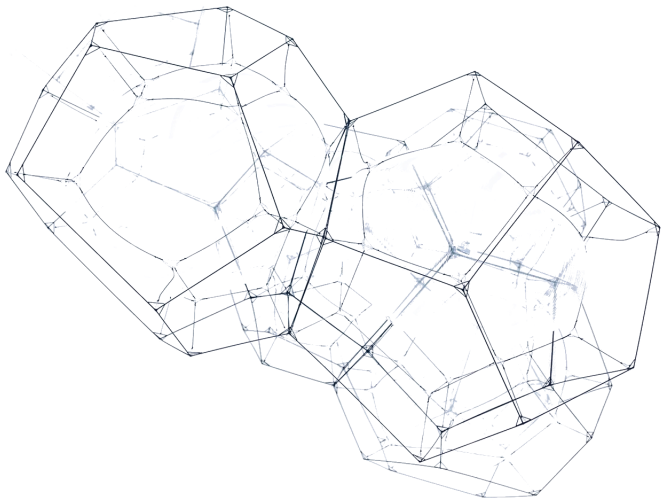

POLYGONS, BUILDINGS AND RELATED GEOMETRIES

Ghent (Belgium)
September 19 - September 22, 2022

ICA

UCLouvain

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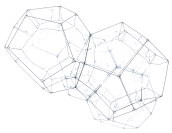
GHENT UNIVERSITY



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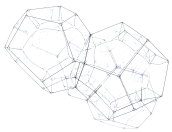
Ghent, Belgium, 19 September - 22 September 2022



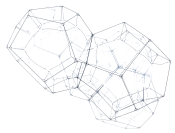
Introduction

Polygons, Buildings and Related Geometries
Ghent, Belgium, 19 September - 22 September 2022

This conference is the 28th edition of the Buildings conference. The major theme of this edition of the international conference is the deep interaction between algebra and incidence geometry in its various guises — in particular, we want to focus on geometric aspects of algebra, and algebraic theories underlying incidence geometries. Some of the main topics of the conference are:

- Generalized polygons and related geometries;
- Buildings of higher rank;
- Geometries and groups of Lie-type;
- Simple groups and their geometries;
- Rank one groups and Moufang sets;
- Algebraic and geometric aspects of the Freudenthal-Tits magic square;
- Algebraic varieties related to incidence geometries;
- Automorphism groups of incidence geometries, and geometric group actions;
- Algebraic groups and Kac-Moody groups;
- Graph- (and in particular tree-) theoretic properties of incidence geometries;
- Topological aspects of buildings and related geometries;
- Computational aspects of the algebraic and combinatorial theory behind incidence geometries of low rank.

Because of the interplay with many other fields of mathematics, a wide variety of ideas and methods will come together at the meeting. The conference will give the opportunity to research faculty and young researchers in algebra and incidence geometry to learn about the latest developments in the main sub-areas, and explore different visions and directions for future work.



Schedule

Polygons, Buildings and Related Geometries
Ghent, Belgium, 19 September - 22 September 2022

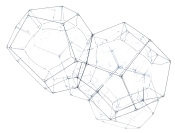
This conference will take place at Ghent University, campus "Ledeganck", Auditorium 9.

The evening lecture by Burkard Polster and the reception will both be held at Ghent University, campus "De Sterre", building S25.

The conference dinner will be held at De Stokerij.

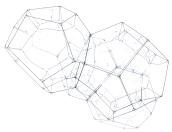
Clicking on the name of a speaker will redirect you to the abstract of their talk.

	Monday 19 September	Tuesday 20 September	Wednseday 21 September	Thursday 22 September
9.00	*Registration*			
9.30				Weiss
10.00	Parkinson	Cuypers	Abramenko	
10.30				Marquis
11.00	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*
11.30	Kramer	Stroppel	Schesler	Van Maldeghem
12.00			Confi	
12.30	Hughes	*Lunch*	*Lunch*	
13.00	*Lunch*			
13.30				
14.00		Titz Mite	Giuzzi	
14.30	De Schepper	Wiedemann	Bischof	
15.00		*Coffee break*	*Coffee break*	
15.30	Santos Rego			
16.00	*Coffee break*	Baumeister	Löwen	
16.30				
17.00	Polster			
17.30				
18.00	*Reception*		*Conference dinner*	
18.30				



Invited talks

Polygons, Buildings and Related Geometries
Ghent, Belgium, 19 September - 22 September 2022



Peter Abramenko

Polygons, Buildings and Related Geometries
Ghent, Belgium, 19 September - 22 September 2022

Finite subgroups of $\mathrm{SL}_n(F[t])$ in characteristic 0

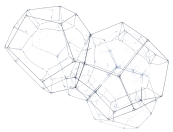
Peter Abramenko

University of Virginia

Joint work with: Andrei Rapinchuk, Igor Rapinchuk

Abstract

Let F be a field of characteristic 0, $F[t]$ the corresponding polynomial ring and G the matrix group $\mathrm{SL}_n(F[t])$. Denote by $F((1/t))$ the field of Laurent series in $1/t$, which is the completion of the rational function field $F(t)$ with respect to the discrete valuation which has $1/t$ as its prime element. Letting G act on the Bruhat-Tits building X of the group $\mathrm{SL}_n(F((1/t)))$ and applying the Bruhat-Tits fixed point theorem, one can show that every finite subgroup of G is conjugate to a subgroup of $\mathrm{SL}_n(F)$. For certain fields F, like the field $\mathbb{Q}_p$ of p-adic numbers, this implies that G has only finitely many conjugacy classes of finite subgroups. The same result holds if SL_n is replaced with a reductive group which is defined over F.



Dual approach to Coxeter and Artin groups: the constructions via quasi-Coxeter elements

Barbara Baumeister

Bielefeld University- Faculty of Mathematics

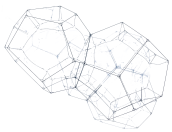
Joint work with: Georges Neaime, Sarah Rees

Abstract

I will give an introduction to the dual approach to Coxeter and Artin groups. Let (W,S) be a Coxeter system of finite rank and $c \in W$ a Coxeter element. In this approach W and its related Artin group $A(W)$ are studied using as a generating set not the simple system S but the set of all the 'reflections'

$$T := \cup_{w \in W} S^w$$

in W. Then the interval $[1,c]$ in the Cayley graph Cay (W,T) and the group presentation $G([1,c])$ determined by that interval are investigated in order to get information on the Artin group $A(W)$. We will also explore the outcome if we replace the Coxeter element by a quasi-Coxeter element, that is the simple system S of W by any generating set of reflections of W of size $|S|$.



Hans Cuypers

Polygons, Buildings and Related Geometries
Ghent, Belgium, 19 September - 22 September 2022

Quasi-Clifford Algebras, their Lie and Jordan Algebras, and Quadratic Forms over $\mathbb{F}_2$

Hans Cuypers

TU/e– Department of Mathematics and Computer Science

Abstract

Let R be a commutative and associative ring containing distinct elements 1 and -1. Let $\Gamma = (\mathcal{V}, \mathcal{E}, \lambda)$ be a labeled graph, with vertex set $\mathcal{V}$, edge set $\mathcal{E}$ and labeling of the vertices $\lambda : \mathcal{V} \to R^*$ which maps $v \in \mathcal{V}$ to invertible elements $\lambda(v) \in R^*$. Then we consider the associative algebra $\mathfrak{C}(\Gamma)$ with identity element $\mathbf{1}$ generated by the elements of $\mathcal{V}$ such that for all $v, w \in \mathcal{V}$ we have

$$\begin{array}{lll} v^2 & = \lambda(v)\mathbf{1}, & \\ vw + wv & = 0 & \text{if } \{v,w\} \in \mathcal{E}, \\ vw - wv & = 0 & \text{if } \{v,w\} \notin \mathcal{E}. \end{array}$$

If Γ is the complete graph, $\mathfrak{C}(\Gamma)$ is a Clifford algebra, otherwise it is a so-called quasi-Clifford algebra, as in [2].

We describe this algebra as a twisted group algebra with the help of a vector space V over the field $\mathbb{F}_2$ equipped with a bilinear form g. See also [1]. Using this description, we determine the isomorphism type of $\mathfrak{C}(\Gamma)$ for several interesting graphs Γ.

As the algebra $\mathfrak{C}(\Gamma)$ is associative, we can also consider the corresponding Lie algebra with Lie bracket $[\cdot,\cdot]$ and Jordan algebra with multiplication $\circ$, as well as some of their subalgebras. We find that the elements $v, w \in \mathcal{V}$ satisfy the following relations

$$\begin{array}{lll} [v,w] & = 0 & \text{if } \{v,w\} \notin \mathcal{E}, \\ [v,[v,w]] & = \lambda(v)w & \text{if } \{v,w\} \in \mathcal{E}. \end{array}$$

and

$$\begin{array}{lll} v \circ v & = \lambda(v)\mathbf{1} & \\ v \circ w & = 0 & \text{if } \{v,w\} \in \mathcal{E}, \\ v \circ (v \circ w) & = \lambda(v)w & \text{if } \{v,w\} \notin \mathcal{E}. \end{array}$$

We provide characterizations of both the Lie and Jordan algebras generated by the elements in $\mathcal{V}$, as algebras defined by these relations.

In case R is a field of characteristic 0, we can identify these Lie algebras with quotients of the compact subalgebras of Kac-Moody Lie algebras and prove that they admit a so-called generalized spin representation, generalizing the work of Hainke, Köhl and Levy [3].

Keywords: Clifford algebra, Lie algebra, Jordan algebra, quadratic forms
MSC: 15A, 16W, 17B, 17C

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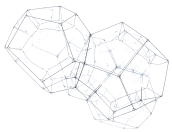

Weyl distance preserving maps on spherical buildings

Anneleen De Schepper
Ghent University–Department of Mathematics: Algebra and Geometry
Joint work with: Hendrik Van Maldeghem, Antonio Pasini, Jesse Tonnelier

Abstract

I will give a not at all complete overview regarding the following question:

Can we reconstruct a spherical building of rank at least 3, when given only the elements of two of its types, and knowing only whether or not these are in one specific, prescribed mutual position?

Some background: One of the many ways to view a building is as a set of chambers C equipped with a (Weyl) distance $\delta : C \times C \to W$, for some Coxeter group W. An automorphism of the building is a map on C preserving the Weyl distance δ. One could wonder whether it suffices for a map on C to preserve just one Weyl distance $w_0 \in W$ to preserve all of them. We will take an incidence geometric approach and actually we will not work with chambers (opposed to [1]) but with the residues of cotype $\{i\}$ for all types i, and the induced Weyl distance. For example, in a building of type A_n with $n \geq 3$, the elements of type i are the subspaces of dimension i, $1 \leq i \leq n$, of an n-dimensional vector space; and for a map ρ to preserve a single Weyl distance, it means that there exist j, k, ℓ such that when U, V and $U \cap V$ are subspaces of respective dimensions j, k, ℓ, then the same holds for U^ρ, V^ρ and $(U \cap V)^\rho$. In general, it comes down to the above mentioned question.

Some spoilers: the A_n case was my first encounter with research, during my bachelor project [3], supervised by Hendrik. No surprises here. For types B_n, C_n and D_n, the problem is considerably harder and there are two nice classes of counter examples. For several special cases there were already results in the literature (e.g. [5, 7, 8, 9]); and in a paper with Hendrik Van Maldeghem [4] and one with Antonio Pasini [2], we dealt with the general situation, up to one special case. The exceptional cases are work in progress, recently re-initiated in the master thesis of Jesse Tonnelier, continuing the work of [6].

Keywords: spherical buildings, polar spaces, projective spaces
MSC: 51E24, 51A50

References

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[3] A. De Schepper & H. Van Maldeghem, Graphs, defined by Weyl distance or incidence, that determine a vector space, *Lin. Alg. Appl.* **449** (2014), 435-464.

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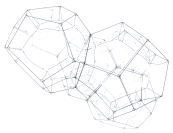


An equation for the Riemann curvature tensor, strongly regular graphs, and finite fields

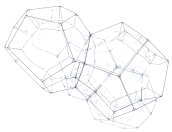
Linus Kramer

Universität Münster, Mathematisches Institut

Joint work with: Christopher Deninger, Theo Grundhöfer

Abstract

We study solutions of a quadratic matrix equation arising in Riemannian geometry. Let S be a real symmetric $n \times n$-matrix with zeros on the diagonal and let θ be a real number. We are interested in solutions of the equations $\sum_k S_{i,k}S_{k,j} + S_{i,j}^2 = \theta S_{i,j}$, for $i < j$, and $\sum_k S_{i,k} = 0$. Our solutions relate the equations to strongly regular graphs, to group rings, and to multiplicative characters and Jacobi sums in finite fields.



Compact oriented parallelisms of PG(3, $\mathbb{R}$) arising from oriented gl-stars

Rainer Löwen

Technische Universität Braunschweig, Institut für Analysis und Algebra

Abstract

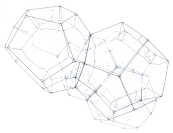
A spread in real projective space is a set of lines such that every point lies on exactly one of them. A (topological) parallelism is a compact set of compact spreads such that every line belongs to exactly one of them. The standard example is Clifford parallelism. Betten and Riesinger constructed many other examples. Similarly, one can define parallelisms for oriented lines. Every parallelism gives rise to an oriented one. In [1] it was noticed that there are nice oriented parallelisms that do not arise in this way. In order to provide more such examples, we show here that a construction originally due to Betten and Riesinger carries over to the oriented case. This construction uses the Klein correspondence and provides regular examples, i.e. all spreads are equivalent to the complex spread. The input needed is a compact gl-star, that is, a set of lines such that every point outside the unit sphere lies on exactly one of them. The transfer of this notion and of the whole construction to the oriented case is not obvious. One key ingredient is to understand why orienting a spread as a 2-sphere amounts to the same as orienting all lines belonging to the spread in a coherent way. Another ingredient is a topological lemma which gives a criterion for bijectivity of maps lifted over a two-sheeted covering.

Keywords: parallelism, Klein correspondence, orientation
MSC: 51H10, 51A15, 51M15, 51M30

References

[1] R. Löwen, Rotational spreads and rotational parallelisms and oriented parallelisms of PG(3, $\mathbb{R}$),*J. Geom.* 110, No. 1, Paper No. 11, 15 p., 2019.

[2] R. Löwen, Regular parallelisms from generalized line stars in PG(3, $\mathbb{R}$): The oriented case, arxiv:4262044



Automorphisms and Opposition in Spherical Buildings

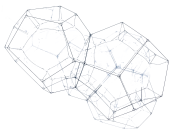
James Parkinson

University of Sydney – Mathematics and Statistics

Joint work with: Hendrik Van Maldeghem, B.Temmermans and M. Victoor

Abstract

The geometry of elements fixed by an automorphism of a spherical building is a rich and well-studied object, intimately connected to the theory of Galois descent in buildings. In recent years, a complementary theory has emerged investigating the geometry of elements mapped onto opposite elements by a given automorphism. In this talk we will give an overview of this theory. This work is all joint with Hendrik Van Maldeghem (and some is joint also with B. Temmermans and M. Victoor).



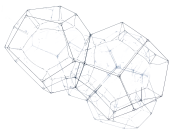
Mathematics and Youtube

Burkard Polster

Monash University

Abstract

This presentation will be a look behind the scenes of the mathematical YouTube channel Mathologer, including a sneak preview of the next video.



Unitals with many automorphisms

Markus J. Stroppel
Universität Stuttgart, LExMath

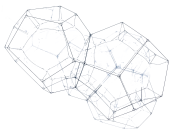
Abstract

Classical examples of unitals arise from suitable polarities of desarguesian projective planes, and can be described by hermitian forms over coordinatizing (skew) fields. The point set is the set of absolute points, the blocks are (induced by) the secant lines.

In the finite case, the fundamental combinatorial properties (each point is on q^2 blocks, each block has $q+1$ points, and any two points are on a unique block) are used as axioms for a class of incidence structures called unitals. We consider a given (possibly non classical) unital as an abstract incidence geometry (without referring to any embedding into an ambient projective plane).

Many examples (and systematic constructions) are known of unitals. For some (but not all) examples, the full group of automorphisms has been determined.

Classical unitals can be characterized by various conditions. The talk focuses on characterizations by suitable transitivity properties. In particular, we obtain a variant of the Lenz classification.



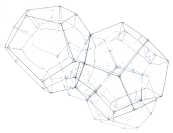
Beautiful subgeometries of beautiful geometries

Hendrik Van Maldeghem
Ghent University – Department of Mathematics: Algebra and Geometry
Joint work with: Paulien Jansen

Abstract

In this talk I report on ongoing joint work with Paulien Jansen, in which we investigate the geometry of the inclusions $G_1 \leq G_2$ of Chevalley groups of the same rank, with G_2 of exceptional type. These are generically obtained by considering the residues of the extended Dynkin diagram of G_2. Our project consists of finding 'nice' orbits of G_1, in particular Grassmannians of the building $\Delta(G_2)$ corresponding to G_2. I intend to present the nicest examples that emerged up to now. I also hope to mention two applications: one to *floor plans of buildings*, and one to the construction of *weak spherical buildings* having the same rank as their *thick frame*.

Keywords: Spherical Tits-buildings, Lie incidence geometries, Chevalley groups
MSC: 51E24, 51A99



Stable pseudo-quadratic modules

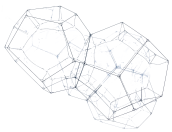
Richard Weiss

Tufts University

Joint work with: Bernhard Mühlherr

Abstract

In 1964 Hyman Bass introduced the notion of the stable range of a ring in K-theory. In 1981 Ferdinand Veldkamp observed that rings of stable range one are precisely the rings over which there is a reasonable notion of a projective plane. The projective planes he studied are, in fact, Tits triangles. In this talk we describe efforts to extend Veldkamp's work to the case of Tits quadrangles.



Contributed talks

Polygons, Buildings and Related Geometries
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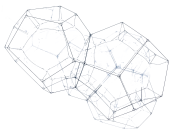


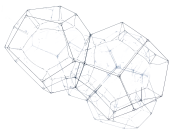
Commutator blueprints

Sebastian Bischof

Justus-Liebig-Universität Giessen – Mathematisches Institut

Abstract

An RGD-system is said to be *over* $\mathbb{F}_2$ if any root group has cardinality 2. One axiom of an RGD-system provides a certain commutator relation between root groups corresponding to prenilpotent pairs of roots. In this talk I will discuss the existence of RGD-systems over $\mathbb{F}_2$ with prescribed commutator relations.



On symplectic polar spaces

Luca Giuzzi

UNIVERSITY OF BRESCIA — DICATAM

Joint work with: I. Cardinali, H. Cuypers and A. Pasini

Abstract

A polar space $\mathcal{S}$ is called symplectic if it admits a projective embedding $\varepsilon : \mathcal{S} \to \mathrm{PG}(V)$ such that the image $\varepsilon(\mathcal{S})$ of $\mathcal{S}$ is defined by an alternating bilinear form of V. The aim of this talk is to characterize symplectic polar spaces in terms of their incidence properties only. This is of special interest especially when $\mathcal{S}$ admits different (non-isomorphic) embeddings, as is the case when $\mathcal{S}$ is defined over a field $\mathbb{K}$ of characteristic 2. The main result we shall discuss is the following theorem as well as some of its consequences.

Theorem. *Let $\mathcal{S}$ be an embeddable polar space with collinearity given by $\perp$. Then, $\mathcal{S}$ is symplectic if and only if the following holds*

(*) if a hyperplane H of $\mathcal{S}$ contains $\{a,b\}^\perp$ for two non-collinear points a,b of $\mathcal{S}$, then there is $c \in \mathcal{S}$ such that $H = c^\perp$ (i.e. H is singular).

Keywords: polar spaces, embeddings, hyperplanes, hyperbolic lines
MSC: 51A50, 51B25, 51E24

References

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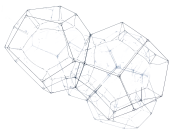


Some non-virtually torsion-free lattices in products of trees and right-angled buildings

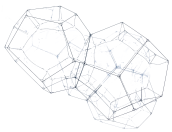
Sam Hughes

University of Oxford – Mathematical Institute

Abstract

In this talk I will construct the first examples of non-virtually torsion-free cocompact lattices in a product of two trees. If time permits I will explain how to use a functor theorem of Anne Thomas to promote these to non-virtually torsion-free cocompact lattices in a product of right-angled buildings.

Keywords: Lattices, non-positive curvature, right-angled buildings, products of trees
MSC: 20E08, 20E26, 20F65, 20F67



Incidence geometries with trialities coming from maps with Wilson trialities

Dimitri Leemans

Université Libre de Bruxelles – Département de Mathématique

Joint work with: Klara Stokes

Abstract

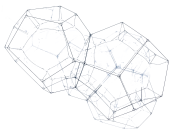
Triality is a classical notion in geometry that arose in the context of the Lie groups of type D_4. Another notion of triality, Wilson triality, appears in the context of reflexible maps [2]. We build a bridge between these two notions, showing how to construct an incidence geometry with a triality from a map that admits a Wilson triality. We also extend a result by Jones and Poulton [1], showing that for every prime power q, the group $\mathrm{PSL}_2(q^3)$ has maps that admit Wilson trialities but no dualities.

Keywords: Triality, reflexible maps, Wilson operators, incidence geometry
MSC: 51A10, 51E24, 20C33

References

[1] G. A. Jones and A. Poulton. Maps admitting trialities but not dualities. *European J. Combin.* 31:1805–1818, 2010.

[2] S. Wilson. Operators over regular maps. *Pacific J. Math.* 81(2):559–568, 1979.



On the centre of Iwahori–Hecke algebras

Timothée Marquis

UCLouvain – IRMP

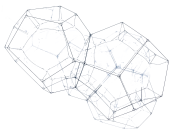
Joint work with: Sven Raum

Abstract

Iwahori–Hecke algebras $\mathbb{C}_{\mathbf{q}}(W)$ are deformations of the group algebra of a Coxeter group W. They are intimately related with the representation theory of groups with a BN-pair whose associated building is locally finite (such as Kac–Moody groups over finite fields). We recently proved that the centre of $\mathbb{C}_{\mathbf{q}}(W)$ is trivial (in the sense that it only consists of the constant functions) whenever W is of (irreducible) indefinite type — when W is of finite or affine type, this is not true anymore. This is a consequence of a purely Coxeter group-theoretic result on conjugacy classes of W.

After reviewing the context and motivation for this latter result, I will explain the key ideas behind its (partly geometric, partly combinatorial) proof.

Keywords: Coxeter groups, Hecke algebras
MSC: 20F55, 20C08



Which arithmetic parabolics are finitely presented?

Yuri Santos Rego

Otto-von-Guericke-Universität Magdeburg

Abstract

It is still a mystery which S-arithmetic groups can be described with finitely many generators and relations. From the 1950s (after Nagao) until the 1990s (after Behr), we learned how to detect whether S-arithmetic subgroups of reductive groups (that is, those we use to construct buildings) or Borel subgroups thereof are finitely presented. The landscape in-between is given by the so-called parabolic subgroups, which are simplex stabilizers in a building. In this talk we shall give a partial classification of finitely presentable S-arithmetic parabolics.

Keywords: Arithmetic groups, parabolic subgroups, finitely presented.
MSC: 11E57, 20F05, 20F12, 20H25, 20G30.

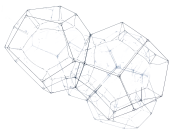
References

[1] Behr, H., Arithmetic groups over function fields. I. A complete characterization of finitely generated and finitely presented arithmetic subgroups of reductive algebraic groups. *J. reine angew. Math.* **495**, 79–118 (1998). DOI:10.1515/crll.1998.023

[2] Nagao, H., On GL(2, $K[x]$). *J. Inst. Polytech. Osaka City Univ. Ser. A* **10**, 117–121 (1959).

[3] Santos Rego, Y., *Finiteness properties of split extensions of linear groups.* PhD Thesis, Universität Bielefeld, pp. viii+109 (2019). DOI:10.4119/unibi/2937569

[4] Santos Rego, Y., On the finiteness length of some soluble linear groups. *Canad. J. Math.*, FirstView (2021). DOI:10.4153/S0008414X21000213



Exotic extensions of groups acting on rooted trees

Eduard Schesler

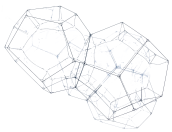
FernUniversität in Hagen

Joint work with: Steffen Kionke

Abstract

Given an infinite rooted tree T, I will extend some known constructions of groups acting continuously on T by inserting some discontinuous behavior. As a result, we obtain a finitely generated, residually finite group G with a variety of exotic properties: Every finite quotient of G is a direct product of non-abelian simple groups, G is amenable while possessing an infinite simple quotient, the profinite completion of G coincides with the profinite completion of a group with property (τ), G gives rise to a continuum of so-called Grothendieck pairs. If time permits, I will discuss the construction of such a group G from a more general point of view by introducing so-called B-systems. These take a group B and a directed systems of groups as an input and produce groups with properties similar to those of G.

Keywords: profinite completion, amenable, branch group
MSC: 20E18, 20E08, 20E26, 43A07



On panel-regular $\tilde{C}_2$-lattices

Thomas Titz Mite

Justus-Liebig-Universität Giessen

Joint work with: Stefan Witzel

Abstract

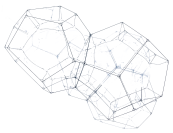
In [1] Essert introduces a class of $\tilde{C}_2$-buildings that admit a lattice acting regularly on two types of panels. He constructs these buildings as universal covers of complexes of groups. After explaining the construction I will focus on the question for which data the construction yields equivariant actions (with respect to an isomorphism between the lattices): The number of these actions (up to equivariance) grows super-exponentially with the thickness parameters of the buildings. For small thickness parameters the numbers can be given explicitly.

Lastly, I would like to mention that almost all of the constructed buildings are exotic, since slanted symplectic quadrangles are used in the construction.

Keywords: Euclidean buildings, complexes of groups, lattices

References

[1] Essert, J.,"A geometric construction of panel-regular lattices for buildings of types $\tilde{A}_2$ and $\tilde{C}_2$", Algebr. Geom. Topol. 13(3) (2013), 1531–1578



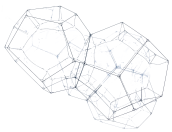
Root Graded Groups

Torben Wiedemann
Justus Liebig University Giessen

Abstract

Let Φ be a finite root system. A Φ-graded group is a group G together with a family of subgroups $(U_\alpha)_{\alpha\in\Phi}$ satisfying some purely combinatorial axioms. The main examples of Φ-graded groups are the Chevalley groups of type Φ, which are defined over a commutative ring and which satisfy the well-known Chevalley commutator formula. We show that if Φ is of rank at least 3, then every Φ-graded group is defined over some algebraic structure (e.g. a ring, possibly non-commutative or, in low ranks, even non-associative) such that a generalised version of the Chevalley commutator formula is satisfied. A new computational method called the blueprint technique is crucial in overcoming certain problems in characteristic 2. This method is inspired by a paper of Ronan-Tits.

Keywords: root gradings of groups, parametrising rings
MSC: 17C05, 20F40, 51C05



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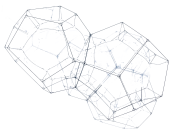

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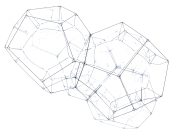

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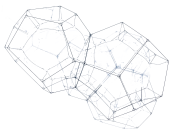

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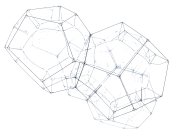

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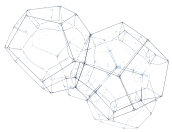

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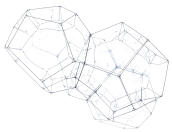

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Polygons, Buildings and Related Geometries
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- *Ghent University*, a top 100 university and one of the major universities in Belgium with 11 faculties offering more than 200 courses and conducting in-depth research within a wide range of scientific domains;
- *Institute of Combinatorics and its Applications*, an international scholar society established for the purpose of promoting the development of combinatorics and of encouraging publications and conferences in combinatorics and its applications;
- Université catholique de Louvain, the leading French-speaking university of Belgium offering courses in all disciplines and educations fuelled by solid research;
- Institut de Recherche en Mathématique et en Physique, one of the 7 research institutes of the Science and Technology Sector of UCLouvain developing research in Fundamental Physics and Pure Mathematics.

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- Bernhard Mühlherr
- Joseph A. Thas
- Koen Thas

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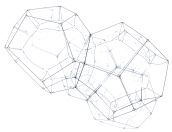


Restaurants

Some information about several restaurants in Ghent close to campus Ledeganck is listed below.

Delicieux

Rating: 4.3/5 (133 reviews)
Price range: €€
Address: (190m, 2 min. walk)
Zwijnaardsesteenweg 15, 9000 Gent
Phone: (+32) 9 245 67 18
Website: delicieux-gent.be

Cuisine: Sandwiches
Opening hours:

Monday	09:00-17:30
Tuesday	09:00-17:30
Wednesday	09:00-17:30
Thursday	09:00-17:30

Tuin van Eten

Rating: 4.1/5 (114 reviews)
Price range: €€
Address: (750m, 9 min. walk)
Kortrijksesteenweg 573, 9000 Gent
Phone: (+32) 9 245 54 66
Website: tuinvaneten.com

Cuisine: Flemish
Opening hours:

Monday	11:30-20:00
Tuesday	11:30-15:00
Wednesday	11:30-20:00
Thursday	11:30-20:00

't Wokske

Rating: 4.7/5 (190 reviews)
Price range: €
Address: (450m, 6 min. walk)
Overpoortstraat 112, 9000 Gent
Phone: (+32) 9 329 83 03
Website: facebook.com/hetwokske

Cuisine: Vietnamese
Opening hours:

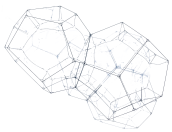
Monday	12:00-14:00	18:00-22:00
Tuesday	12:00-14:00	18:00-22:00
Wednesday	12:00-14:00	18:00-22:00
Thursday	12:00-14:00	18:00-22:00

The Ribhouse

Rating: 4.1/5 (134 reviews)
Price range: €€
Address: (400m, 6 min. walk)
Overpoortstraat 63, 9000 Gent
Phone: (+32) 9 279 22 22
Website: ribhouse.be

Cuisine: Rib/BBQ
Opening hours:

Monday	closed
Tuesday	17:00-22:00
Wednesday	17:00-22:00
Thursday	17:00-22:00



De Appelier

Rating: 4.5/5 (327 reviews)
Price range: €
Address: (550m, 7 min. walk)
Citadellaan 47, 9000 Gent
Phone: (+32) 9 221 67 33
Website: deappelier.be

Cuisine: Vegetarian
Opening hours:

Monday	11:30-14:00
Tuesday	11:30-14:00
Wednesday	11:30-14:00
Thursday	11:30-14:00

Clemente

Rating: 4.4/5 (47 reviews)
Price range: €
Address: (300m, 4 min. walk)
Merelstraat 2, 9000 Gent
Phone: (+32) 9 222 22 23
Website: clementepizza.be

Cuisine: Pizza/Pasta
Opening hours:

Monday	17:00-22:00
Tuesday	17:00-22:00
Wednesday	17:00-22:00
Thursday	17:00-22:00

Uzume Sushi Overpoort

Rating: 4.3/5 (40 reviews)
Price range: €€
Address: (260m, 3 min. walk)
Zwijnaardsesteenweg 45, 9000 Gent
Phone: (+32) 9 335 69 90
Website: overpoort.uzumesushi.be

Cuisine: Sushi/Asian
Opening hours:

Monday	closed	
Tuesday	12:00-14:00	17:00-22:00
Wednesday	12:00-14:00	17:00-22:00
Thursday	12:00-14:00	17:00-22:00