Women in Algebra and Symbolic Computations

BAD DÜRKHEIM

December 9-11 2019

Organising committee: Niamh Farrell, Michael Kunte, Hannah Markwig, Frank-Olaf Schreyer.

SCHEDULE

KK:= Room Kleiner Kursaal
B:= Room Berlin

Monday 9th December

12:00 - 14:00	Lunch	
13:00 - 14:00	Registration	
14:00 - 14:05	Welcome (KK)	
14:05 - 15:00	**Keynote Talk: Radha Kessar (KK)**	
15:00 - 15:30	Mandi Schaeffer Fry (KK)	Karin Schaller (B)
15:30 - 16:00	Coffee Break	
16:00 - 16:30	Lucia Morotti (KK)	Alheydis Geiger (B)
16:30 - 17:00	Annette Bachmayr (KK)	Ana Romero Ibanez (B)
18:30	Dinner	
19:30	Reception (B)	

Tuesday 10th December, Morning

09:00 - 10:00	**Keynote Talk: Ragni Piene (KK)**	
10:00 - 10:30	Maria Chlouveraki (KK)	Lena Walter (B)
10:30 - 11:00	Coffee Break	
11:00 - 11:30	Surinimalee Mannaperuma (KK)	Andrea Thevis (B)
11:30 - 12:00	Nihal Bircan Kaya (KK)	Münevvar Pinar Eroğlu (B)
12:00 - 14:00	Lunch	

Tuesday 10th December, Afternoon

14:00 - 14:30	Madeleine Whybrow(KK)	Türkü Özlüm Celik (B)
14:30 - 15:00	Noelia Rizo (KK)	Mahsa Sayyary Namin (B)
15:00 - 15:30	Coffee Break	
15:30 - 16:00	Paula Händel (KK)	Amy Wiebe (B)
16:00 - 17:00	Poster Session (Room TBC)	
18:30	Dinner	

Wednesday 11th December

09:00 - 10:00	**Keynote Talk: Jennifer Balakrishnan (KK)**	
10:00 - 10:30	Yvonne Weber (KK)	Mara Ungureanu (B)
10:30 - 11:00	Coffee Break	
11:00 - 11:30	Mima Stanojkovski (KK)	Isabel Stenger (B)
11:30 - 12:00	Emily Norton (KK)	Sara Lamboglia (B)
12:00	Lunch	

KEYNOTE TALKS
KLEINER KURSAAL

Monday December 9th 14:00
Radha Kessar, City, University of London
Exotic fusion sytems, weight conjectures, and spetses

Fusion systems are categories whose objects are the subgroups of a fixed finite p-group (p a prime number) and whose morphisms mimic conjugation in some hypothetical overgroup of the p-group. Every finite group gives rise to a fusion system on a Sylow p-subgroup but there are many fusion systems which do not arise in this way. The weight conjectures of modular representation theory are conjectural equations which express some representation theoretic invariant of finite groups (such as the number of irreducible representations) in terms of fusion systems. The fusion system side of these equations makes sense for arbitrary fusion systems. I will show how this observation leads to a weight theory of fusion systems (joint work with Markus Linckelmann, Justin Lynd, and Jason Semeraro). I will also present ongoing work with Gunter Malle and Jason Semeraro connecting the weight theory of fusion systems with the Broué-Malle-Michel theory of spetses.

Tuesday December 10th 09:00
Ragni Piene, University of Oslo
Projective geometry from a toric point of view

Classical projective geometry addresses questions like classification, duality, divisors, sections and projections, enumerative geometry, etc. Although projective toric varieties form but a small subset of all projective varieties, they constitute nonetheless a rich and interesting playground for the study of these questions. The fact that there is a "dictionary" between toric projective varieties and convex lattice polytopes makes it possible to use combinatorial methods to prove algebraic geometrical results, and vice versa. In the talk, I will give several examples of such results.

Wednesday December 11th 09:00
Jennifer Balakrishnan, Boston University
A tale of three curves

Let C be a smooth projective curve with genus at least 2 defined over the rational numbers. It was conjectured by Mordell and proved by Faltings that C has finitely many rational points. However, Faltings' proof does not give an algorithm for finding these points.

In the case when the Jacobian of C has rank less than its genus, the Chabauty-Coleman method can often be used to find the rational points of C, using the construction of certain p-adic line integrals. In certain cases of higher rank, p-adic heights can often be used to find rational or integral points on C. I will describe these "quadratic Chabauty" techniques (part of Kim's nonabelian Chabauty program) and will highlight some recent examples where the techniques have been used: this includes a problem of Diophantus originally solved by Wetherell and the problem of the "cursed curve", the split Cartan modular curve of level 13. This talk is based on joint work with Amnon Besser, Netan Dogra, Steffen Mueller, Jan Tuitman, and Jan Vonk.

MONDAY AFTERNOON
ROOM: KLEINER KURSAAL

15:00 Mandi Schaeffer Fry, MSU Denver
On Prime Numbers and Character Degrees

A theorem of Thompson studies the structure of finite groups with exactly one irreducible character degree not divisible by a given prime. I will discuss two recent variations of Thompson's theorem. Namely, in joint work with E. Giannelli and C. Vallejo, we prove a variation for pairs of primes, and with E. Giannelli and N. Rizo, we prove a variation in the case that exactly two degrees are not divisible by a given prime.

——————— COFFEE BREAK ———————

16:00 Lucia Morotti, Leibniz Universität Hannover
Irreducible tensor products of representations of symmetric and related groups

In general tensor products of two irreducible representations of dimension larger than 1 are not irreducible. For example, for symmetric groups there exist irreducible tensor products of two representations of dimension larger than 1 only in characteristic 2. On the other hand, for alternating groups and covering groups of symmetric and alternating groups there exist such irreducible tensor products in any characteristic. In this talk I will present (partial) results on the classification of irreducible tensor products of symmetric and alternating groups as well as of their covering groups.

16:30 Annette Bachmayr, Universität Bonn
Free differential Galois groups

Recently, the term "free proalgebraic group" has been introduced. A proalgebraic group is free if and only if certain embedding problems are solvable. I my talk, I will introduce these notions and explain an application to differential Galois theory. This is joint work with David Harbater, Julia Hartmann and Michael Wibmer.

MONDAY AFTERNOON
ROOM: BERLIN

15:00 Karin Schaller, FU Berlin
Minimal models of surfaces with $p_g = 1$, $q = 0$ associated with canonical Fano 3-polytopes

Let Δ be a canonical Fano 3-polytope, i.e., a 3-dimensional lattice polytope containing exactly one interior lattice point. Then the affine surface Z_Δ defined by a generic Laurent polynomial f_Δ with the Newton polytope Δ is birational to a smooth projective minimal surface S_Δ with $q = 0$ and $p_g = 1$. Using the classification of all 674,688 canonical Fano 3-polytopes obtained by Kasprzyk, we show that S_Δ is a $K3$-surface except for exactly 9,089 canonical Fano 3-polytopes Δ. In the latter case, we obtain 9,040 canonical Fano 3-polytopes Δ defining minimal elliptic surfaces S_Δ of Kodaira dimension 1 and 49 canonical Fano 3-polytopes Δ defining minimal surfaces S_Δ of general type with $|_1(S_\Delta)| = K^2 \in \{1, 2\}$ considered by Kynev and Todorov. This is a joint work with Alexander Kaspzryk and Victor Batyrev.

———————— COFFEE BREAK ————————

16:00 Alheydis Geiger, Eberhard Karls Universität Tübingen
A tropical count of binodal cubic surfaces

There are 280 binodal cubic surfaces through 17 points in general position. They can be counted using tropical geometry. After a brief introduction into tropical geometry the concept of counting surfaces through points in Mikhalkin position via floor plans will be introduced. We will see that we can recover 214 binodal surfaces with separated nodes in their tropicalizations and we will also have a short look at the complexes hiding the remaining 66 surfaces.

16:30 Ana Romero Ibanez, Universidad de La Rioja
Computing spectral sequences with Kenzo and SageMath

In this work we present some algorithms and programs for computingspectral sequences, a useful tool of Algebraic Topology which can be used in many situations to compute homology and homotopy groups of spaces and in other problems of different areas. By using the effective homology method, we are able todetermine all components of spectral sequences even when the initial spaces are not of finite type.Our programs were developed as a module of the computer algebra system Kenzo and can also be used in SageMath by means of a new interface between both systems.

TUESDAY MORNING
ROOM: KLEINER KURSAAL

10:00 Maria Chlouveraki, Université de Versailles-St. Quentin
The symmetrising trace conjecture for Hecke algebras

Twenty years ago, Broué, Malle and Rouquier published a paper in which they associated to every complex reflection group two objects which were classically associated to real reflection groups: a braid group and a Hecke algebra. Their work was further motivated by the theory, developed together with Michel, that certain complex reflection groups could play the role of Weyl groups of objects that generalise finite reductive groups, named Spetses. The four of them advocated that several nice properties of braid groups and Hecke algebras generalise from the real to the complex case, culminating in two main conjectures as far as the Hecke algebras are concerned: the freeness conjecture [BMR] and the "symmetrising trace conjecture" [BMM]. The two conjectures are the cornerstones in the study of several subjects that have flourished in the past twenty years, but the first one was only recently proved for all complex reflection groups, while the second one remains widely open. In this talk, we will discuss our proof of the symmetrising trace conjecture for exceptional groups of rank 2, which is achieved through a combination of algorithms programmed in different languages (C++, SAGE, GAP3, Mathematica). This is joint work with Christina Boura, Eirini Chavli and Konstantinos Karvounis.

——————— COFFEE BREAK ———————

11:00 M.H.M.J. Suranimalee, TU Kaiserslautern
Fast and practical algorithms for solving linear systems over number fields

Many algorithms in linear algebra that compute over number fields or even rational numbers, or other finitely generated fields, face the problem called the intermediate coefficient swell. To overcome this, the standard strategy is not to compute directly but to compute modulo some ideal. This can be computed using, either Chinese remaindering or a variation of Newton-Hensel lifting. Often, the final step of these algorithms combined with reconstruction methods, such as rational reconstruction to convert the integral result into the rational solution. This strategy has been used to tackle huge computations in linear system solving and determinant computation.

We present a deterministic algorithm for solving a non-square linear system $Ax = b$ over number field K of degree d. As the solution is not unique we compute a basis for the kernel to normalize the solution. The implementation accompanied with a fast algorithm to compute the kernel of a matrix of any size. In both two cases, a modified version of the Dixon algorithm has been used. Preconditioning techniques can be applied to optimize this computation using maximum rank square sub-system. Here, we use a simple modified version of vector reconstruction to find the solution from the lifting output. The algorithm works for integer matrices. We rigorously assess its complexity as $O(n^3 \log^2 n)$ number of operations over $\mathbb{Z}$, for an integer matrix of rank n.

11:30 Nihal Bircan Kaya, Cankiri Karatekin University
Sequences of Integers of Quadratic Fields and Relations with Artin's Primitive Root Conjecture

——————— LUNCH ———————

TUESDAY MORNING
ROOM: BERLIN

10:00 Lena Walter, FU Berlin
Functions on Newton Okounkov bodies

Given a smooth projective toric variety and a big torus-invariant divisor this data determines a polytope. In a situation that is not necessarily toric, the Newton-Okounkov body generalizes this construction and associates a convex body to a given smooth projective variety, a big divisor and an admissable flag of subavarieties. On this body one can define convex functions that come from geometric valuations. The values of these functions are in general hard to compute. We study the toric case. This is joint work in progress with Christian Haase and Alex Küronya.

——————— COFFEE BREAK ———————

11:00 Andrea Thevis, Universität des Saarlandes
Strata and Veech groups of p-origamis

We study a certain class of translation surfaces called p-origamis. These surfaces arise as normal covers of the torus with p-groups as deck group. The goal is to classify the types of singularities of p-origamis and to show that these depend in most cases only on the isomorphism class of the deck group. These questions are closely related to properties of the deck group. If time permits, I describe how to compute the Veech groups of p-origamis. Veech groups are finite index subgroups of $\mathrm{SL}(2, \mathbb{Z})$ and are related to the groups of affine diffeomorphisms of the corresponding surfaces.

11:30 Münevvar Pinar Eroğlu, Dokuz Eyül University Izmir
On Commutator Matrix Rings

Let R be a ring. For $a, b \in R$, let $[a, b] := abba$, the additive (Lie) commutator of a and b. Given two subsets A, B of a ring R, let $[A, B]$ denote an additive subgroup of R generated by all elements $[a, b]$ for $a \in A$ and $b \in B$. A ring R is called a commutator if every element of the ring is a sum of additive commutators; that is, R is called a commutator if $[R, R] = R$. A ring R is called a noncommutator if it is not commutator. Let $M_n(R)$ be the $n \times n$ matrix ring with coefficients in a ring R. If $S = M_n(R)$ is a commutator ring, then S is called a commutator matrix ring. In 1956 Irving Kaplansky asked the following question: does there exist a division ring (skew field) D with $D = [D, D]$ (cf. [7]). In the case of a division ring finite dimensional over its center, the question has a negative answer. It is shown that every division ring finite dimensional over its center is a noncommutator. However, two years later the above question was answered affirmatively by Bruno Harris, who constructed an example of a commutator division ring called Harris division ring (cf. [6]). Recently, in 2006 Zachary Mesyan gave examples of some commutator rings, and some properties of such rings in [8]. However, it seems that not much is known about the structure of commutator matrix rings. In this work, our main aim is to investigate commutator matrix rings by studying both the conditions under which a ring is a commutator, and the relationships between commutator rings and commutator matrix rings.

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[2] S.A. Amitsur and L.H. Rowen, *Elements of reduced trace 0*, Isr. J. Math., **87**, (1994), 161-179.
[3] P.M. Cohn, *Skew field constructions*, CUP Archive, **27**, (1977).
[4] P.K. Draxl, *Skew fields*, Cambridge University Press, **81**, (1983).
[5] M.P. Eroğlu and T.-K. Lee, *The images of polynomials of derivations*, Comm. Algebra, **45**, (2017), 4550-4556.
[6] B. Harris, *Commutators in division rings*, Proc. Amer. Math. Soc., **9**, (1958), 628-630.
[7] I. Kaplansky, *Problems in the theory of rings, Report of a Conference on Linear Algebras*, National Research Council Publication, **502**, (1956), 1-3.
[8] Z. Mesyan, *Commutator rings*, Bull. Austral. Math. Soc., **74**, (2006), 279-288.

——————— LUNCH ———————

TUESDAY AFTERNOON
ROOM: KLEINER KURSAAL

14:00 Madeleine Whybrow, University of Primorska
An algorithm to construct dihedral axial algebras

Axial algebras are non-associative algebras generated by semisimple idempotents, called axes, that obey a fixed fusion law. Important examples of axial algebras include the Griess algebra and Jordan algebras. Axial algebras that are generated by two axes are called dihedral and are fundamental in the study of these algebras in general. We present an algorithm to classify and construct dihedral axial algebras. This work represents a significant broadening in our understanding of axial algebras.

14:30 Noelia Rizo, Università degli Studi di Firenze
Galois action on the principal block and cyclic Sylow p-subgroups

A classical question in the representation theory of finite groups is to determine what properties of a group or its local structure can be obtained from its character table. In particular the study of the relations between the set $\mathrm{Irr}(G)$ of the irreducible complex characters of G and the structure of its Sylow p-subgroups has been one of the cornerstones of the character theory of finite groups. If one wants to go deeper, there is a more sophisticated version of this: looking at the irreducible characters in the principal Brauer p-block of G.

In this work, we characterize finite groups G having a cyclic Sylow p-subgroup in terms of the action of a specific Galois automorphism on the principal p-block of G, for $p = 2, 3$. We conjecture an analog statement for blocks with arbitrary defect group and we prove that this general statement would follow from the blockwise Galois-McKay conjecture.

——————— COFFEE BREAK ———————

15:30 Paula Hähndel, Martin-Luther-Universität Halle-Wittenberg
Orbital Graphs

In this talk I will describe orbital graphs. For a permutation group acting on a set, each orbital graph represents an orbit of the group action on pairs of elements of the set. Therefore the automorphism group of every orbital graph approximates the group started with. Among other things, this property makes orbital graphs a useful tool for pruning the search tree in backtrack methods. I will present some properties of these graphs, and how they relate to the group.

TUESDAY AFTERNOON
ROOM: BERLIN

14:00 Türkü Özlüm Çelik, MPI MiS Leipzig
Algebraic Computations of Theta Constants

David Mumford showed that a principally polarized abelian variety can be written as an intersection of quadrics in a projective space. The coefficients of these quadrics are determined by certain constants, called theta constants, which are the values of transcendental functions, namely theta functions, at zero. In this talk, we will present an algebraic way to compute the constants associated with a non-hyperelliptic curve.The method is implemented in the mathematical software package Magma.We will finalize the talk with a demonstration of the implementation.

14:30 Mahsa Sayyary Namin, MPI MiS Leipzig
The algebraic degree of the Fermat-Weber point

The Fermat-Weber point p^* is the unique point that minimizes the sum of distances from n given points in the real Euclidean space. Given n points in general position in the real plane with non-zero integer coordinates, we determine the algebraic degree of p^* over the field of rationals $\mathbb{Q}$, i.e. we find the degree of the minimal polynomials of the coordinates of p^* over $\mathbb{Q}$.

——————— COFFEE BREAK ———————

15:30 Amy Wiebe, Berlin Mathematical School
Slack Ideals of Polytopes

In this talk we introduce the slack realization space of a polytope. This is an algebraic relaxation of the usual realization space. It comes with a defining ideal, called the slack ideal. We show how the slack ideal can be used as a computational framework for answering classical questions about the polytope. We also show how the slack ideal can be simplified for increased computational efficiency.

POSTER SESSION
TUESDAY 16:00

Helen Naumann, Goethe-Universität Frankfurt
A unified framework of SAGE and SONC polynomials and its duality theory

We introduce and study a cone which consists of a class of generalized polynomial functions and whichprovides a common framework for recent non-negativity certificates of polynomials in sparse settings. Specifically,this $\mathcal{S}$-cone generalizes and unifies recentcones of polynomials that establish non-negativity upon the arithmetic-geometric inequality (SAGE cone, SONC cone). We provide a comprehensive characterization of the dual cone of the $\mathcal{S}$-cone. As applications of this result,we give an exact haracterization of the extreme rays of the $\mathcal{S}$-cone and thus also of its specializations.

Sofia Brenner, Friedrich-Schiller Universität Jena
The Malle-Navarro Conjecture

The Malle-Navarro conjecture relates central block theoretic invariants in two inequalities. We outline the proof of this conjecture for 2- and 3-blocks of general linear and unitary groups in non-defining characteristic.

Theresa Kumpitsch, Goethe-Universität Frankfurt
The Section Conjecture

Let X be a smooth, projective, geometrically connected curve of genus at least 2 over a number field k. The Section Conjecture in Anabelian Geometry predicts a description of the rational points of X in terms of its algebraic fundamental group $\pi_1(X)$. More precisely, it is conjectured that the rational points are in bijection with conjugacy classes of sections of the canonical morphism from $\pi_1(X)$ to the absolute Galois group of k. This posters serves as an introduction to this conjecture.

Sophia Elia, FU Berlin
Congruence Normality Through Oriented Matroids

Given a hyperplane arrangement and a chosen base region, there is an associated partial order on the regions of the arrangement, called the *poset of regions*. If the hyperplane arrangement is simplicial, the poset of regions is a lattice. Congruence normality is an important property a lattice of regions may possess, and it may be established geometrically. We translate the conditions for congruence normality to the setting of oriented matroids, and give a computational, combinatorial proof that the poset of regions of finite Weyl groupoids of rank three are congruence normal, extending the result that the poset of regions is congruence normal for finite Weyl groups.

Kunda Kambaso, RWTH Aachen
PBW Filtration and Bases for Demazure Modules Associated to Hook-Shaped Weyl Group Elements

The PBW filtration on the highest weight representations in type A_n have been studied by E. Feigin, G. Fourier and P. Littleman. In particular, they constructed a basis for the associated graded space labeled by lattice points of some nice polytopes (the FFLV polytopes). A similar construction has been done by G. Fourier for Demazure modules associated to triangular Weyl group elements. We extend this result to Demazure modules associated to a class of non-triangular elements namely the hook-shaped Weyl group elements. This is based on ongoing work which is part of my PhD.

Laura Voggesberger, TU Kaiserslautern
Conjugacy Classes in Finite Reductive Groups

Algebraic groups are groups which are equipped with the structure of an algebraic variety, which allows us to consider topological structures as well as the group structure. The structure of connected reductive groups can be described with the help of tori, Borel subgroups and root systems. In this project we are also interested in finite reductive groups G^F which are the fixed points of a connected reductive group G under a Frobenius or Steinberg endomorphism $F : G \to G$.

Let G be an algebraic group defined over a field of characteristic p. In connected reductive groups, it is known that all regular unipotent elements form a single conjugacy class. In finite reductive groups G^F when the p is good for G and the centre of G is connected, one can show that all the regular unipotent elements are conjugate. The aim of this project is to establish when a regular unipotent element is conjugate to its inverse in finite reductive groups of adjoint type.

Marie Brandenburg, FU Berlin

Verity Mackscheidt, RWTH Aachen

Laura Maaßen, RTWH Aachen

WEDNESDAY MORNING
ROOM: KLEINER KURSAAL

10:00 Yvonne Weber, TU Kaiserslautern
Computation of the p-part of the Class Group

The class group is a fundamental invariant in number theory. Its computation is of high interest. Especially, for some applications such as for elliptic curves or in Iwasawa theory it suffices to compute the p-part of the class group. Taking on a geometric perspective the divisor class group of plane algebraic curves can be considered an analogue to the classical class group in number theory. Using Cartier divisors we aim to effectively calculate the p-part of the divisor class group of plane algebraic curves over function fields with positive characteristic p. From these results we investigate p-class field towers and abelian extensions coming back to number theory again in that way. Eventually, this will allow us to characterize equivalences of plane algebraic curves and identify curves directly in the frame of class field theory. Furthermore, it potentially enables us to write an algorithm for computing isomorphisms of algebraic function fields. This short talk will focus on Cartier divisors being an essential tool in this context.

——————— COFFEE BREAK ———————

11:00 Mima Stanojkovski, MPI MiS Leipzig
Hessians, automorphisms of p-groups, and torsion points of elliptic curves

We compute the number of automorphisms of p-groups whose commutator structures are determined by Hessian determinantal representations of certain elliptic curves. We will interpret these numbers in terms of the geometry of the defining curves. This is joint work with Christopher Voll.

11:30 Emily Norton, TU Kaiserslautern
Generalized Mullineux involution and perverse equivalences

The Mullineux involution on p-regular partitions describes the result of tensoring an irreducible representation of the symmetric group with the sign representation in characteristic p. More generally, we may work in the setting of Hecke algebras at an e'th root of unity (e not necessarily prime). An algorithm for computing the Mullineux involution using colored directed graphs was discovered by Kleshchev in 1995. Building on this crystal perspective, we generalize the definition of Mullineux involution to all charged multipartitions. The generalized Mullineux involution arises naturally in representation theory as the combinatorial shadow of certain derived equivalences on module categories. This is joint work with Thomas Gerber and Nicolas Jacon.

——————— LUNCH ———————

WEDNESDAY MORNING
ROOM: BERLIN

10:00 Mara Ungureanu, Albert-Ludwigs-Universität Freiburg
Counting points in the intersection of secant varieties to algebraic curves

For a curve in projective space, the varieties parametrising its secant planes are among the most studied objects in classical algebraic geometry. We shall review some of their basic properties and reformulate this extrinsic geometry problem in terms of objects intrinsic to the geometry of the abstract curve, namely secant divisors to a given linear series. We consider in particular enumerative formulas counting the number of points in the intersection of two such secant varieties on a given curve and discuss their validity. We shall see that the surprising behaviour of the counting formulas arises from the complicated geometry of secant varieties, which are not always of expected dimension.

——————— COFFEE BREAK ———————

11:00 Isabel Stenger, Universität des Saarlandes
Constructing numerical Godeaux surfaces

Being the minimal surfaces of general type of smallest possible invariants, numerical Godeaux surfaces have always been of a particular interest in the classification of algebraic surfaces. In this talk, I will present a construction method for numerical Godeaux surfaces based on homological and computer algebra and report on some recent progress. This is joint work with Frank-Olaf Schreyer.

11:30 Sara Lamboglia, Goethe-Universität Frankfurt
Tropical convex hulls of infinite sets

In this talk I will present some recent results on the interplay between tropical and classical convexity. In particular, I will focus on the tropical convex hull of convex sets and polyhedral complexes and their explicit computation. This will lead to a lower bound on the degree of tropical curves. This is joint work with Cvetelina Hill and Faye Pasley Simon.

——————— LUNCH ———————

PARTICIPANTS

Ali Aslam, TU Kaiserslautern
Annette Bachmayr, Universität Bonn
Marie Brandenburg, FU Berlin
Sofia Brenner, Friedrich-Schiller Universität Jena
Maria Chlouveraki, Université de Versailles-St. Quentin
Sofia Elia, FU Berlin
Münevvar Pinar Eroğlu, Dokuz Eylül University Izmir
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Laura Voggesberger, TU Kaiserslautern
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Madeleine Whybrow, University of Primorska
Yvonne Weber, TU Kaiserslautern
Amy Wiebe, Berlin Mathematical School