**Institut** Computational Mathematics AG Algebra und Diskrete Mathematik



Technische Universität Braunschweig

#### Workshop

# **Questions, Algorithms, and Computations** in Abstract Group Theory

### 21 – 24 May 2013 in Braunschweig

More than 100 years ago, Dehn proposed his famous problems on abstract groups: the word problem, the conjugacy problem and the isomorphism problem. It is long known that all three problems are undecidable in general. Nonetheless, they have inspired a rich theory of computations in abstract group theory.

There are various classes of groups, such as word hyperbolic, automatic and polycyclic groups, for which many natural decision problems are solvable. On the other hand, there are constructions of groups with unexpected properties such as the Tarski or Dehn monsters. Most problems are undecidable in these monsters. It remains open to understand both of these opposite ends and where the boundary between them lies.

Our aim is to combine researchers form the areas of abstract group theory, computer science and algebraic geometry to obtain new advances in algorithmic group theory.

## **Speakers include:**

- Oleg Bogopolski (Düsseldorf)
- Tara Brough (St Andrews)
- Jack Button (Cambridge)
- Laura Ciobanu (Neuchatel)
- Andrew Duncan (Newcastle)
- Bob Gilman (New York)
- Derek Holt (Warwick)
- Max Horn (Gießen)
- Jim Howie (Edinburgh)

- Benjamin Klopsch (Magdeburg)
- Martin Kreuzer (Passau)
- Markus Lohrey (Leipzig)
- Markus Pfeiffer (St Andrews)
- Sarah Rees (Newcastle)
- Colva Roney-Dougal (St Andrews)
- Tobias Rossmann (Bielefeld)
- Saul Schleimer (Warwick)

- Sebastian Jambor (Auckland)
- Olga Kharlampovich (New York)
- Ben Steinberg (New York)
- Richard Weidmann (Kiel)

• Armin Weiß (Stuttgart)

#### **Organisers:**

Volker Diekert (Stuttgart), Bettina Eick (Braunschweig), Bakh Khoussainov (Auckland), Alexei Miasnikov (New York), Eamonn O'Brien (Auckland)

**Local Organisers:** Andreas Distler, Matthias Neumann-Brosig

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More information at: www.icm.tu-bs.de/ag\_algebra/ws-qac