

MATHEMATISCHES FORSCHUNGSINSTITUT OBERWOLFACH

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## Enveloping Algebras and Geometric Representation Theory

Organised by  
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March 4th – March 10th, 2012

ABSTRACT. The workshop brought together experts investigating algebraic Lie theory from the geometric and combinatorial points of view.

*Mathematics Subject Classification (2000)*: 14Lxx, 17Bxx, 20Gxx.

### Introduction by the Organisers

The workshop *Enveloping Algebras and Geometric Representation Theory* organized by Shrawan Kumar (Chapel Hill), Peter Littelmann (Köln) and Wolfgang Soergel (Freiburg) was held March 4th—March 10th, 2012. It continues a series of conferences on enveloping algebras, as is indicated by the first part of the title, but the main focus was on geometric and combinatorial methods in algebraic Lie theory.

The meeting was attended by over 50 participants from all over the world, including quite a few younger researchers. We had usually three talks in the morning and two in the afternoon, leaving ample time for discussions, which was amply used by the participants. Wednesday afternoon was reserved for an excursion to Sankt Roman, and on Thursday afternoon we had four shorter talks by younger participants. In addition, we had an ‘open problem’ session on Thursday evening preceding the social evening.

Particularly interesting seemed to us the work of Leclerc and Hernandez on the Grothendieck rings of certain representations of quantum loop enveloping algebras and its relation to certain twisted derived Hall algebras; The work on geometrically killing the dynamical Weyl group by Ginzburg; the solution to the so-called AGT-conjecture of Alday, Gaiotto and Tachikawa by Vasserot; and the proof of Kostant’s

Clifford algebra conjecture by Joseph; the work of Ian Gordon and Ivan Losev on category  $\mathcal{O}$  for cyclotomic rational Cherednik algebras, establishing in this case a derived equivalence between different blocks conjectured in general by Rouquier.

## Workshop: Enveloping Algebras and Geometric Representation Theory

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