

Description

The two volumes contain papers of the participants in the International Press Conference on Motives, polylogarithms and non-abelian Hodge theory which took place at UC Irvine in June 1998. The conference commemorated the twentieth anniversary of the remarkable Irvine lectures of Spencer Bloch on "Higher regulators, algebraic K-theory and zeta functions of elliptic curves". The conference presented some of the best recent research in algebraic K-theory, Hodge theory, motivic cohomology and polylogarithms.

Fourteen papers explore the frontiers of motivic cohomology and motivic homotopy theory, the periods of modular forms and the variational aspects of Hodge theory. Contributions include:

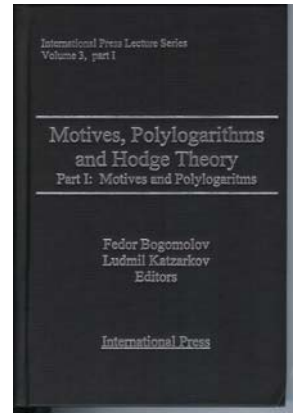
INTERNATIONAL PRESS

Motives, Polylogarithms and Hodge Theory (Part I: Motives and Polylogarithms)

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1. Open Problems in the Motivic Stable Homotopy Theory, I - By Vladimir Voevodsky
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4. Commuting elements in Galois groups of function fields - By Fedor Bogomolov and Yuri Tschinkel
5. Mixed Hodge Structures and Iterated Integrals, I - by Zdzislaw Wojtkowiak

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Description

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A program paper of V. Voevodsky outlining the outstanding open questions in the stable homotopy theory of motives, as well as papers on motivic cohomology, Galois cohomology and algebraic differential characters by A. Beilinson, S. Bloch, F. Bogomolov, H. Esnault and Y. Tschinkel; A paper of D. Zagier describing in detail the traces of the values of modular functions at quadratic irrationalities, works on theory of classical and elliptic polylogarithms by A. Goncharov and A. Levin as well as works of J. Wildeshaus and Z. Wojtkowiak describing the recent progress towards a proof of various versions of Zagier's conjecture; A foundational paper of C. Simpson on geometric n-stacks and their applications to non-abelian Hodge structures, and papers on the geometric applications of non-abelian Hodge theory by D. Arapura, L. Katzarkov, T. Pantev, A. Reznikov and C. Teleman.

Motives, Polylogarithms and Hodge Theory (Part II: Hodge Theory)

Part II

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5. Algebraic aspects of higher nonabelian Hodge theory - By Carlos Simpson
6. Higgs bundles, integrability, and holomorphic forms - By Donu Arapura
7. Nonabelian (p, p) classes - by Ludmil Katzarkov and Tony Pantev
8. The structure of Kähler groups, I: second cohomology - by Alexander Reznikov
9. Some Hodge theory from Lie algebras - by Constantin Teleman

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