

Contents

Preface	vii
Transcendental Aspects	1
The Hodge Theoretic Fundamental Group and its Cohomology DONU ARAPURA	3
The Real Regulator for a Self-product of a General Surface XI CHEN AND JAMES D. LEWIS	23
Lipschitz Cocycles and Poincaré Duality ERIC FRIEDLANDER AND CHRISTIAN HAESEMAYER	33
On the Motive of a K3 Surface CLAUDIO PEDRINI	53
Two Observations about Normal Functions CHRISTIAN SCHNELL	75
Positive Characteristics and Arithmetic	81
Autour de la conjecture de Tate à coefficients \mathbf{Z}_ℓ pour les variétés sur les corps finis JEAN-LOUIS COLLIOT-THÉLÈNE ET TAMÁS SZAMUELY	83
Regulators via Iterated Integrals (Numerical Computations) HERBERT GANGL	99
Zero-Cycles on Algebraic Tori ALEXANDER S. MERKURJEV	119
Chow-Künneth Projectors and ℓ -adic Cohomology ANDREA MILLER	123
Connections with Mathematical Physics	135
Motives Associated to Sums of Graphs SPENCER BLOCH	137
Double Shuffle Relations and Renormalization of Multiple Zeta Values LI GUO, SYLVIE PAYCHA, BINGYONG XIE, AND BIN ZHANG	145