

Contents

Preface	vii
Scientific program	ix
Part 1	1
Wall-crossing implies Brill-Noether: Applications of stability conditions on surfaces	
ARENDE BAYER	3
Kähler–Einstein metrics, canonical random point processes and birational geometry	
ROBERT J. BERMAN	29
Hall algebras and Donaldson-Thomas invariants	
TOM BRIDGELAND	75
The Cremona group	
SERGE CANTAT	101
Mori dream spaces and blow-ups	
ANA-MARIA CASTRAVET	143
The space of arcs of an algebraic variety	
TOMMASO DE FERNEX	169
Stability of algebraic varieties and Kähler geometry	
SIMON K. DONALDSON	199
Syzygies of projective varieties of large degree: Recent progress and open problems	
LAWRENCE EIN and ROBERT LAZARSELD	223
Stable gauged maps	
EDUARDO GONZÁLEZ, PABLO SOLIS, and CHRIS T. WOODWARD	243
Uniformisation of higher-dimensional minimal varieties	
DANIEL GREB, STEFAN KEBEKUS, and BEHROUZ TAJI	277
Boundedness of varieties of log general type	
CHRISTOPHER D. HACON, JAMES MCKERNAN, and CHENYANG XU	309
Θ -stratifications, Θ -reductive stacks, and applications	
DANIEL HALPERN-LEISTNER	349

Bimeromorphic geometry of Kähler threefolds ANDREAS HÖRING and THOMAS PETERNELL	381
Moduli of stable log-varieties—an update SÁNDOR J. KOVÁCS	403
Enumerative geometry and geometric representation theory ANDREI OKOUNKOV	419
A calculus for the moduli space of curves RAHUL PANDHARIPANDE	459
Frobenius techniques in birational geometry ZSOLT PATAKFALVI	489
Singular Hermitian metrics and positivity of direct images of pluricanonical bundles MIHAI PĂUN	519
Positivity for Hodge modules and geometric applications MIHNEA POPA	555
Notes on homological projective duality RICHARD P. THOMAS	585
Non-commutative deformations and Donaldson-Thomas invariants YUKINOBU TODA	611
Nakamaye’s theorem on complex manifolds VALENTINO TOSATTI	633